Journal of the Royal Society of Arts

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FORTHCOMING MEETINGS

WEDNESDAY, 1ST FEBRUARY, at **2.30 p.m.** '*Wallpaper and its History*', by Eric A. Entwisle, a Director of Wall Paper Manufacturers Ltd. Ivan C. Sanderson in the Chair. (The paper will be illustrated by lantern slides.)

FRIDAY, 3RD FEBRUARY, at **7.30 p.m.** FILM EVENING. (The programme will differ from that announced in the January *Journal*. See p. 133 of this issue.)

MONDAY, 6TH FEBRUARY, at **6 p.m.** The last of three CANTOR LECTURES on '*The Chemical and Plastics Industries*', by James Taylor, M.B.E., Ph.D., D.Sc., F.R.I.C., a Director of Imperial Chemical Industries Ltd. Sir Alexander Fleck, K.B.E., F.R.S., President, Society of Chemical Industry, in the Chair.

WEDNESDAY, 8TH FEBRUARY, at **2.30 p.m.** '*The Timber Industry*', by Rodney Perry, Chairman, Timber Development Association. The Right Honble. the Earl of Radnor, K.G., K.C.V.O., Chairman, The Forestry Commission, and a Vice-President of the Society, in the Chair.

WEDNESDAY, 15TH FEBRUARY, at **2.30 p.m.** PETER LE NEVE FOSTER LECTURE. '*The Influence of the Festival of Britain on Design To-day*', by Sir Gerald Barry. Professor Robert Y. Goodden, C.B.E., A.R.I.B.A., Master, Faculty of Royal Designers for Industry, in the Chair. (The lecture will be illustrated by lantern slides.)

WEDNESDAY, 22ND FEBRUARY, at **6 p.m.** '*Geography and the Business World To-day*', by the Right Honble. Lord Nathan, P.C., T.D., F.B.A., President, Royal Geographical Society, and a Member of Council, Royal Society of Arts. Oswald P. Milne, F.R.I.B.A., J.P., Chairman of Council of the Society, in the Chair.

WEDNESDAY, 1ST MARCH, at **2.30 p.m.** FIRST EDMUND RICH MEMORIAL LECTURE. '*Youth Welfare in the Pattern of Education*', by W. F. Houghton, M.A., Education Officer, London County Council. Sir Griffith Williams, K.B.E., C.B., in the Chair.

MONDAY, 6TH MARCH, at **6 p.m.** The first of three CANTOR LECTURES on '*Modern Photography*', entitled 'Photography in Industry and Commerce', by M. J. Langford, F.I.B.P., F.R.P.S. Peter A. Le Neve Foster, a Member of Council of the Society, in the Chair.

TUESDAY, 7TH MARCH, at **5.15 p.m.** COMMONWEALTH SECTION. '*Sovereign Nigeria*', by Sir John Macpherson, G.C.M.G., formerly Governor-General, Federation of Nigeria. The Right Honble. the Viscount Boyd of Merton, C.H., Chairman, Royal Commonwealth Society, in the Chair. (Tea will be served in the Library from 4.30 p.m.)

WEDNESDAY, 8TH MARCH, at **6 p.m.** '*The Steel Industry To-day and To-morrow*', by Sir Andrew McCance, D.L., D.Sc., LL.D., F.R.S., Chairman and Managing Director, Colvilles Ltd. (The first of two papers—see also 22nd March.)

FRIDAY, 10TH MARCH, at **7.30 p.m.** FILM EVENING. (The programme will be announced in the next issue of the *Journal*.)

MONDAY, 13TH MARCH, at **6 p.m.** The second of three CANTOR LECTURES on '*Modern Photography*', entitled 'Photography in Medicine', by C. E. Engel, F.I.B.P., F.R.P.S., of the Department of Medical Illustration, Guy's Hospital. Sir Charles Dodds, M.V.O., M.D., D.Sc., Ph.D., F.R.C.P., F.R.S., Courtauld Professor of Biochemistry, University of London, in the Chair.

WEDNESDAY, 15TH MARCH, at **2.30 p.m.** '*The Folk Lore and History of Diamond*', by S. Tolansky, D.Sc., Ph.D., D.I.C., F.R.S., Professor of Physics, Royal Holloway College (University of London), and a Member of Council of the Society.

MONDAY, 20TH MARCH, at **6 p.m.** The last of three CANTOR LECTURES on '*Modern Photography*', entitled 'Photography in Education', by Miss Margaret F. Harker, F.I.B.P., F.R.P.S., Head of the School of Photography, Regent Street Polytechnic. Hugh A. Warren, M.Sc.(Eng.), M.I.C.E., M.I.Struct.E., Principal, South-East London Technical College, and a Member of Council of the Society, in the Chair.

WEDNESDAY, 22ND MARCH, at **6 p.m.** '*Economic and Commercial Aspects of the Steel Industry*', by Sir Robert Shone, C.B.E., Executive Member, Iron and Steel Board. The Right Honble. Lord Mills, K.B.E., Paymaster-General, in the Chair. (See also 8th March.)

Fellows are entitled to attend any of the Society's meetings without tickets (except where otherwise stated), and may also bring two guests. When they cannot accompany their guests, Fellows may give them special passes, books of which can be obtained on application to the Secretary.

Official representatives of Companies in association with the Society may also attend, with one guest.

VISIT OF H.R.H. THE PRESIDENT

The Duke of Edinburgh, President of the Society, attended by Rear-Admiral Christopher Bonham Carter, visited the Society's House on Friday, 16th December, and took luncheon with the Chairman and Members of Council. Also present as the guest of the Council was Mr. Robert Nicholson, F.S.I.A., to whom His Royal Highness presented the Benjamin Franklin Medal for 1960.

SECOND ANNUAL RECEPTION

A separately printed slip was included in the January *Journal* stating that the second Annual Reception will be held at the Society's House on Friday, 3rd March, 1961. It will take place between 8.30 and 11 p.m., and the dress will be dinner jackets. The cost of tickets, including all refreshments, will be 30*s*. each. Fellows who wish to attend and have not yet applied for tickets are now asked to do so, sending the appropriate remittance. Accommodation is limited, and it has therefore been decided that the number of tickets to be issued to any single Fellow should be restricted to one in addition to his own.

The guest of honour on 3rd March will be Sir Howard Florey, the newly elected President of the Royal Society and a former recipient of the Society's Albert Medal.

Guests will be received at the head of the main staircase by the Chairman of Council and Mrs. Milne between 8.30 and 9 o'clock, and the evening's arrangements will include a film show, a small exhibition of designs by past winners of awards in the Society's Industrial Art Bursaries Competition, and a recital of music.

The last-named entertainment will have a special significance this year. As a token of the Society's desire to encourage students in every sphere, it has been decided that on the occasion of the forthcoming and subsequent Annual Receptions a student of music shall be invited to give two short recitals for the enjoyment of Fellows. This invitation is being extended, not as a competitive award, but rather as an acknowledgement of the dedication to the art of music that a concert career involves. In any one year there are a few young people, pianists, string players, singers and the like, who stand on the precarious threshold of this career, and who need and deserve every practical help that can be given. It is hoped that the opportunity given by the Society's Reception will symbolize its interest in the young musician to-day, and that this will become an annual event of some importance in the musical calendar. The musician who will appear on 3rd March is Mr. John Barstow, a young pianist who has recently completed his studies at the Royal College of Music. In future years it is hoped that the invitation will be extended to include other instrumentalists, and singers.

FILM EVENING

In consequence of the fact that the film *This is the B.B.C.* has very recently been shown on television for the second time, it has been decided not to include it in the programme for the Society's Film Evening on 3rd February as originally intended.

The programme will now consist of the following three films:

Pembrokeshire, my County
Unseen Enemies
Michael Ayrton

Unseen Enemies (32 minutes), which is in colour, was made for the Shell International Petroleum Company with the co-operation of the World Health Organization. Its subject is the unceasing conflict between the microbes of disease and the means of their control, and it emphasizes that the development of the latter primarily depends upon the improvement of economic and social conditions. This film will be introduced by Mr. Michael Clarke, its Director.

Michael Ayrton (15 minutes) is one of a series of films recently produced for B.B.C. Television under the general title *The Artist Speaks*, and records the varied work of this British painter. The film will be introduced by its Producer, Mr. John Read.

Tickets of admission are not required for this occasion, and Fellows are entitled to introduce two guests. Light refreshments will be served in the Library after the performance.

AWARD OF THE BENJAMIN FRANKLIN MEDAL FOR 1961

With the approval of His Royal Highness the President, the Benjamin Franklin Medal for 1961 has been awarded to Mr. Alick Dick, Chairman and Managing Director of Standard-Triumph International Ltd., 'for his contribution to industrial progress in the motor car industry'. It will be remembered that this award (instituted in 1956 to commemorate the 250th anniversary of Benjamin Franklin's birth and the bicentenary of his election to membership of the Society) is made annually to 'individuals who have attained early distinction, with promise of further achievement, in the promotion of arts, manufactures and commerce'.

Mr. Dick, who was born in 1916, joined the Standard Motor Company as an apprentice in 1934, and at the end of his term entered the Purchase Department. He quickly showed outstanding ability and when the company was given the task of erecting and operating 'shadow' aircraft factories for the Government shortly before the war, he was appointed Chief Buyer for those factories. This was a valuable prelude to his wartime work as production control engineer, first at the Banner Lane aero-engine factory and later at the Canley factory where the Mosquito aeroplane was produced.

After the war the Standard Company, like the rest of the motor industry, was faced with the problems of reconverting its factories to motor car manufacture. It was one of the first to complete this process, during which Mr. Dick was personal assistant to Sir John Black, the Managing Director. His energy and ability were recognized by his election to the Board in 1947 as Assistant Managing Director. His sphere of action subsequently widened beyond production engineering to the general administration of the Company's affairs, and in August, 1951, he was appointed Deputy Managing Director. On the retirement of Sir John Black he was made Managing Director in January, 1954.

In the seven years during which Mr. Dick has been at the head of the Company, its interests in the Ferguson tractor have been disposed of and a whole new range of car models initiated, beginning with the successful Triumph-Herald. In December, 1960, he was appointed Chairman of the Company, while continuing as Managing Director.

Mr. Dick was elected President of the Society of Motor Manufacturers and Traders in 1958.

PAXTON MEMORIAL TRUST BURSARY

In 1960 the Society for the second time offered the award of a Paxton Memorial Trust Bursary to assist a British student taking up horticulture as a career to study its practice in the United Kingdom or overseas. It will be recalled that the funds for this Bursary had been made available under the terms of the Paxton Memorial Trust, created in 1951 by the late Miss Violet Markham to commemorate her grandfather, Sir Joseph Paxton (1801-65), the celebrated gardener and designer of the Crystal Palace, and quondam Member of this Society.

Six entries were received for the 1960 Bursary, and the Council has decided that it should be awarded to Mr. Peter Glen, now employed as Technical Officer in the Belfast Parks Department, where his chief work is the training of apprentice gardeners. Mr. Glen proposes to use the Bursary for a comparative study of the teaching of horticulture at different academic and practical levels, in the course of which he intends to visit institutions in Great Britain and in Germany or Holland.

This award was made on the unanimous recommendation of an advisory committee appointed by the Council and consisting of Sir Ernest Goodale (Chairman), the Earl of Radnor, Mr. P. E. Cross (a Fellow of the Society) and the Honble. Lewis Palmer (representing the Royal Horticultural Society, which once again gave valuable help in the organization of the competition).

OFFER OF ENDOWED PRIZES, 1961

The Society, as Trustee for the undermentioned endowments, offers the following prizes during the year 1961:

HOWARD PRIZE OF £50 FOR MECHANICAL MOTIVE POWER

The Howard Trust was established in 1868 for the purpose of making awards periodically to the authors of treatises on steam or other motive agents, and a prize of £50 is offered for award to the author of a treatise on some aspect of the subject of motive agents. Works already published are eligible for this award.

FOTHERGILL PRIZE OF £20 FOR FIRE PREVENTION OR FIRE FIGHTING

Under the Fothergill Trust (established by the will of Dr. Fothergill in 1821) a prize of £20 is offered for a descriptive essay or model embodying some new idea for the prevention or suppression of fire.

Conditions of Entry

(1) Entries for the above prizes must be received by the Secretary of the Royal Society of Arts, 6/8, John Adam Street, Adelphi, London, W.C.2, not later than 31st July, 1961, and must be clearly marked with the entrant's name and address, and the prize for which they are submitted. Essays must be typed.

(2) The Society cannot accommodate bulky apparatus for judging. Entries must be submitted in the form of written descriptions or models, but the Society may subsequently require a demonstration with the actual apparatus.

(3) The Society reserves the right to divide or withhold all or any part of the above prizes, should the quality of the entries justify such a course.

(4) The Society reserves the right to exhibit or publish any entries (the copyright being retained by the competitor).

(5) The Society cannot accept any responsibility for the safety of papers or models submitted to it for the purpose of these awards.

(6) The decision of the Council of the Society regarding all matters connected with the awards will be final, and correspondence cannot be entered into regarding the reasons for any decisions it may take.

The Council is anxious to give the widest publicity to these offers and would therefore appreciate any assistance which Fellows may be able to give in making them known. Copies of the particulars for distribution will be sent on request.

JOURNAL INDEX AND BINDING CASES

The index and title-page for Volume 108 of the *Journal* are now ready, and will be sent, free of charge, to Fellows who apply for them. Orders for binding cases (with which copies of the index and title-page are supplied as a matter of course) should be sent to P. G. Chapman & Co., Ltd., Kent House Lane, Beckenham, Kent, who will also undertake the work of binding for an additional charge.

MEETING OF COUNCIL

A meeting of Council was held on Monday, 9th January. Present: Mr. Oswald P. Milne (in the Chair); Mrs. Mary Adams; Lord Bossom; the Honble. G. C. H. Chubb; Lord Conesford; Mr. R. E. Dangerfield; Mr. Geoffrey de Freitas; Mr. P. A. Le Neve Foster; Mr. John Gloag; Sir Ernest Goodale; Professor R. Y. Goodden; Dr. Stanley Gooding; Mr. Milner Gray; Mr. Antony Hopkins; Dr. R. W. Holland; Mr. Edgar E. Lawley; Lord Nathan; Lord Netherthorpe; Mr. Paul Reilly; Sir Gilbert Rennie; Mr. A. R. N. Roberts; Sir Philip Southwell; Professor S. Tolansky; Mr. G. E. Tonge; Mr. C. M. Vignoles; Mr. Hugh A. Warren; Sir Harold Wernher, and Miss Anna Zinkeisen; with Dr. K. W. Luckhurst (Secretary); Mr. G. E. Mercer (Deputy Secretary), and Mr. J. S. Skidmore (Assistant Secretary).

ELECTIONS

The following candidates were duly elected Fellows of the Society:

Adcock, James, London.
Badcott, Dennis Horace, Allestree, Derbyshire.
Barnes, John Eric, N.D.D., Derby.
Bordoh, Severinus Cudjoe, London.
Borradaile, Miss Rosamund, London.
Brown, Geoffrey, Kingston-upon-Hull, Yorks.
Brown, James Graham, F.R.A.N.Z., F.C.I.S., Westport, New Zealand.
Cahill, Thomas Joseph, B.A., F.R.I.B.A., Alnmouth, Northumberland.
Cockett, Victor Percy, Upminster, Essex.
Corbett, Mrs. Joyce, Much Wenlock, Shropshire.
Crone, Michael Desmond, M.A., Kirriemuir, Angus, Scotland.
Davies, Edward Cecil, Lausanne, Switzerland.
Edwards, Mrs. Mary Florence, Rhyl, Flints, Wales.
Ellison, Miss Gabriel Sheila, Lusaka, N. Rhodesia.
Fleming, William George, Belfast, N. Ireland.
Ganz, Herbert, B.A., Bury, Lancs.
Gaskin, Geoffrey, N.D.D., A.T.D., Altrincham, Cheshire.
Gordon, Mrs. Antoinette Germaine-Marie, Leamington Spa, Warwickshire.
Green, The Reverend Alfred, J.P., Sheffield.
Grell, Aubrey Vivian, Dominica, West Indies.
Hartman, Professor Paul, B.Sc., M.C.E., Teaneck, New Jersey, U.S.A.

Hatton, Henry, Higher Bebington, Cheshire.
Higgin, Spencer Perceval, O.B.E., Boston, Mass., U.S.A.
Hughes, George Ravensworth, C.V.O., Seaford, Sussex.
Jackson, Arnold Kenneth, Birmingham.
Johnson, Mrs. Marjorie, Stretford, Lancs.
Lai, Arthur Kui-Kong, B.A., Hong Kong.
Lamprell-Jarrett, Peter Neville, London.
Lister, John Malcolm, Mansfield, Notts.
Matthews, Jack, B.Sc., A.R.C.S., Tunbridge Wells.
Millington-Drake, Sir Eugen, K.C.M.G., London.
Mitchell, William Newbigging, Stourport-on-Severn, Worcs.
Norcott, Denis Owen, A.F.C., A.R.I.C.S., Oxted, Surrey.
Okoye, Michael Chukuemeka, Ebute-Metta, Nigeria.
Pemberton, Richard David, N.D.D., Tolworth, Surrey.
Primentas, Nicholas, Abbotsford, Victoria, Australia.
Ratter, The Reverend Magnus Cluness, London.
Roberson, Lewis Harold, M.A., Greenhithe, Kent.
Stephenson, David Newton, N.D.D., Camberley, Surrey.
Symonette, Robert Hallam, Nassau, Bahamas.
Williams, William Henry, M.A., LL.B., London.
Wiltshire, Kenneth William, A.M.I.Mech.E., Solihull, Warwickshire.

The following company was duly admitted into association with the Society:

The National Cash Register Company Ltd., London.

LUNCHEON IN HONOUR OF PROFESSOR SIMON LISSIM

It was announced that a luncheon was being arranged by American Fellows of the Society in honour of Professor Simon Lissim, Senior Honorary Corresponding Member in the U.S.A., and that this would be held in New York on Tuesday, 21st February.

BENJAMIN FRANKLIN MEDAL

The Benjamin Franklin Medal for 1961 was awarded to Mr. Alick Dick (see separate Notice on p. 134).

PAXTON MEMORIAL TRUST BURSARY

The Paxton Memorial Trust Bursary for 1960 was awarded to Mr. Peter Glen (see separate Notice on p. 134).

ARCHITECTS REGISTRATION COUNCIL AND R.I.B.A.

Mr. E. Maxwell Fry and Mr. Hugh A. Warren were appointed as the Society's representatives on the Boards of Education of the Architects Registration Council and the R.I.B.A. respectively, in succession to Mr. Oswald P. Milne and Dr. R. W. Holland.

OTHER BUSINESS

A quantity of financial and other business was transacted.

PRESENTATION OF FOUR R.D.I. DIPLOMAS AND OF THE BICENTENARY MEDAL FOR 1960, TOGETHER WITH AN ORATION

At a Special Meeting of the Society held on Thursday, 5th January, 1961, with

Oswald P. Milne, F.R.I.B.A., J.P.,

Chairman of Council of the Society, in the Chair

THE CHAIRMAN *opened the Meeting as follows:*

My Lords, Ladies and Gentlemen,

Before we come to the business of the evening, may I say a few words in preface?

It is always borne very much in on me how right and sure the founders of this Society were in their belief that art was a very necessary ingredient in the manufacture of goods. I always like the first chapter in Genesis, where the creation of the world is described and we are told, at the end of each day, 'and God saw that it was good'. Within our human limitations, we ought also to see that all things we make are good; and to be good a thing must be suited for its purpose, efficient in its working, honestly made and of good quality, and of course as far as in us lies, it should have the quality of beauty. To attain that in these complicated days of manufacture I am sure the manufacturer has got to be in close co-operation with the designer.

Fortunately this Society has always attracted to its counsels men of vision and energy, and so it has been able to match its activities with the changing tempo of industry. One such man was Henry Cole—a man of immense energy and vision, who joined the Society in 1846 and became Chairman of Council in 1850. One of his actions was to propose a great shop window for British industry, which was at that time expanding very greatly. In this enterprise of a large Exhibition he was backed up by our remarkable President of those days, the Prince Consort. The project grew to such dimensions that a Royal Commission was formed to give it substance and it emerged as the Great Exhibition of 1851. But the initiative and drive behind the whole undertaking remained that of the Royal Society of Arts. It formed a landmark in the history of industry and taste.

Coming nearer to the present day, we have Sir Frank Warner, himself a silk manufacturer, who when he was on the Council inaugurated a scheme which he felt would be of benefit in encouraging young artists to turn their minds to the design of goods. The Society offered a series of prizes through which the young designer could be brought into touch with the industrialist, and the industrialist could know where he might turn for talent. That was so successful an idea that it has developed in the course of the years into our big annual Bursaries Competition, which is supported by industry to a gratifying extent. Sir Ernest Goodale, the son-in-law of Sir Frank Warner, has developed the Bursaries scheme and has been largely instrumental in bringing it to its present usefulness.

Another such man was my namesake the late J. A. Milne, who as a Member of Council saw that the artist who turned his talent to designing for industry instead of painting pictures had little recognition. He felt that behind such artists there should be some institution (a body having such a relationship as the Royal Academy holds to practitioners of the fine arts, or as the R.I.B.A. holds to architects), and that this Society ought to take up that position behind industrial designers. The result was the creation of the Faculty of R.D.I., which has given to the designer a status and backing which has brought general realization of the importance of his function. In the last year or two the Royal Designers for Industry have done a great deal of work in the interior design of the two ships recently launched, the *Canberra* and the *Oriana*; to mention only a few names, Misha Black, Sir Hugh Casson, Milner Gray, Brian O'Rourke, Ernest Race and Professor R. D. Russell have been engaged therein. And again, in the Civic Trust's improvement scheme at Norwich, a scheme of great potential public importance, Mr. Misha Black has played a leading part. In architecture and the embellishment of buildings Sir Hugh Casson and Sir Basil Spence are achieving great things.

In competition with other countries the appearance of our goods becomes more and more important, and it is the continuous aim of the Royal Society of Arts to ensure that the British manufacturer should be growingly design conscious. The Faculty of R.D.I. is increasingly setting a high standard of industrial design.

I now call upon the Master of the Faculty to introduce the new recipients of this distinction.

PROFESSOR R. Y. GOODDEN, MASTER OF THE FACULTY OF ROYAL DESIGNERS FOR INDUSTRY, *then spoke as follows:*

I have the honour to present three British designers to receive the Diploma of Royal Designer for Industry, and to speak in praise of one American designer to be distinguished *in absentia* with the Honorary Diploma.

You might suppose, Sir, that in a season when fine birds are so unusually plentiful, our party had lacked spirit to return with no more than a brace and a half from the home covert and another half brace for the diplomatic bag; but we were already almost too well provided, and in any case—what birds! You will find in this small number names so eminent as to have been until now *conspicuously* absent from our roll. Indeed, because I owe my place here to some show of versatility rather than of perseverance, I suddenly find the rod a more convenient instrument than the gun and our party to be returning rather from a day of coarse fishing, one here and there toiling happily under the weight of one of those pike of legendary size and artfulness and near immortal constitution, long known to lurk in the fern-fringed twilights of some once monkish fishpond and never before outgeneralled.

MR. STANLEY MORISON *was first introduced:*

Stanley Morison, for example: a man whose genius in typography and type design may truly be said to have enriched the world. You would wish me to refer to the fine productions of the Cambridge University Press of the period when he as typographical adviser and Walter Lewis as University Printer were in collaboration; to that great stream of type faces newly designed and old ones of beauty

revived which flowed from the Monotype machines when he was at the fountain head and which made universally available the means of fine design in printing; and, as an instance of his versatility and breadth of interest, his borrowing from Chinese royalty and lending to Victor Gollancz the famous yellow jacket which for so many years now has made a Gollancz book the first thing and the last to claim one's attention in any bookshop, willy nilly as might a vociferous, but of course cultivated, parrot of similar plumage announcing its presence in the holy quiet of the Athenæum.

A true scholar, at work in this most scholarly of the branches of design, he has failed (if he has failed in anything) to refuse all academic crowns, one among them so exactly fitting that I discover with surprise that the University of Cambridge did not institute for his especial honour its degree of Doctor of Letters.

I leave to the end mention of the work for which Stanley Morison is no doubt most famous, and indeed it speaks daily for itself. With the present typographical arrangement of *The Times* (but surely he is excused the antics of the picture page) and with the celebrated New Roman and Italic type faces, he confirmed in visual terms that great newspaper's special character of authority, clarity and conformity; and ensured that, even if its new architecture should prove to be unexpectedly cool, typographically at least Printing House would remain a Square.

Once a fount of founts, and still a very flower of printer's flowers! Gentle as he seems, I counsel you, Sir, to treat this great man gently. He has dressed the immortal who bears the Thunderer's message and made him apt for mortal eyes to see. Tread he never so lightly among us, the dust on his sandals is fulminate of mercury!

The diploma was presented by the Chairman, and the Master then introduced MR. ALASTAIR MORTON.

The fig tree is deciduous. Leather, however fashionable, is not ideally adapted for wearing next the skin. Weaving must therefore be one of the oldest, if not the oldest, of the necessary crafts, and as soon as you have made what will keep the draught from your body you will turn to what will keep the draught from swirling round the hearth. At the head of this ancient, useful and honourable calling Alastair Morton has long held a place of the first distinction, both as the presiding genius and as the principal designer of his company of Edinburgh Weavers.

The vision of his father Sir James Morton in creating this small subsidiary of Morton Sundour, with a charter to be concerned only with making the best and the most beautiful of stuffs without regard to making profits, and with a record in the event of making both, has been matched by the devotion and inspiration of the son, by whose guidance and example the company has held pride of place in the production of furnishing textiles of a faultless standard of progressive, fascinating and often bold design these thirty years; for when Wells Coates and his colleagues were engaged in what proved to be the action of break-through in their campaign for design true of our time, Alastair Morton and Edinburgh Weavers were already there with the materials they could use.

In reaching our conclusion we find ourselves in very honourable company, for news has just come at this happiest of moments that Alastair Morton has been

accorded the Royal Warrant. This example of imaginative patronage and approbation must specially delight us here, given as it is to a man so steadfast in his championship of progress, as well as excellence, in design. As to the name of his company, with the weaving sheds in Carlisle, the Edinburgh association is for me a mystery which I would not have elucidated, for art and mystery are no strangers. The company was born of Morton Sundour, and if you tell me that it took a dour sun indeed to penetrate to the Lawnmarket through the serried chimneys of Auld Reekie, it will do.

As if the distinction of his own design were not enough, Alastair Morton has deserved our recognition in a second way. Himself a painter of stature, he has been quick to see that in the artist's mind is done much of what science calls the pure research, some of whose practical application will later be the concern of the designer for industry. From many distinguished painters he has commissioned textile designs, and in the production of them has added to their, but also to his own, artistic achievement; for the translation of a drawing into the woven textile, as I learned to my great advantage from his one-time colleague the late Alec Hunter, is itself in the truest sense a work of art, and without this realization by the weaver the drawing may do little more than hint at its own possibilities. It is, at the least, the plot but not the play; at the most, the play but not the acting of it.

And so to the curtain. In the drowsy warmth of a midsummer night you may fall to dreaming and slip into a world where imagination is all-pervasive and only as precious as the air you breathe; but in the cold reasonableness of an evening in mid-winter you must own that imagination is the true philosophers' stone and its exercise the magical formula which for ever eluded the alchemists. So in the antic ceremony of the court of Athens there comes to claim his meed of praise one Bottom, a weaver; but here, and in reality—a weaver, top!

The Diploma was presented by the Chairman, and the Master next introduced SIR BASIL SPENCE:

When I exchanged gun for rod a little while ago I was momentarily negligent of my coming duty to Sir Basil Spence. The immediate Past President—President at the time when our invitation reached him—of the Royal Institute of British Architects, and knighted last summer at the end of a most distinguished tenure of that office, it seems unlikely that we could have contrived the capture without a drag trawl to arrest him and a steam winch at the least to wind him in. So eminent is he for his achievement as an architect that it is hard to recall that only a few years ago his reputation, already big enough to satisfy another man, stood almost entirely on his work as a designer of exhibitions, interiors and furniture; and that it was his extreme dissatisfaction with this enviable state of affairs that drove him, against all the pressure of the busiest period of preparation for the Festival of Britain, to devote his evenings to the famous set of competition drawings from the success of which his practice as an architect redeveloped.

Of his work of the kind that we now celebrate I recall with particular admiration the set of designs for furniture of laminated construction which he made for Neil Morris of Glasgow, as experimental in their technique as they were refined in their

design; among interiors two Edinburgh restaurants, L'Aperitif and the Albyn, and more recently, the Board Room, with its furniture, in the new offices of Associated Electrical Industries; in exhibitions his work on Enterprise Scotland, a series of stands for Imperial Chemical Industries and the Sea and Ships pavilion of the South Bank Exhibition. I remember too, that it was he, more than anyone, who first demonstrated that if you stood before the cliff face of Earls Court or the glacier of Olympia and pronounced with the right mixture of authority, impudence and charm the words 'Open Sesame', those two forbidding mountain sides could be made to open doors and disclose riches hardly less unexpected than those which widened Ali Baba's eyes, and all decked out with a mastery that made the Board of Trade of the late '40s and early '50s the leading exponent of the design of a large trade fair.

Samuel Johnson, whom for his delight in pulling a Scotsman's leg I hardly dare quote in Basil Spence's presence, affirmed that the noblest prospect a Scotsman ever sees is the high road that leads him to London. For an Orcadian I suppose there are two of these exhilarating moments—his first sight of the sea lane from Kirkwall to Leith, and then of the A.1. For *this* Orcadian the road comes to a destination only to unfold in some new direction—to Edinburgh, to London, to Coventry where he presently prepares such a climax as that home of climaxes has perhaps not seen since the medieval builders unscaffolded their spire, and now, like all good roads, to Rome.

Another literary man, the author of *De Bello Gallico*, returning from a visit to this island, announced the success of his mission in a very short speech of unparalleled arrogance which was perhaps the first, perhaps the only example of a famous passage of literature composed exclusively of four lettered words. Now, and we have waited two thousand years, the time has come to settle that score, but by a victory in the arts of peace, and none here but would endorse with all his heart the choice of our protagonist; and if anything so injudicious as the cackling of a goose on the Campidoglio should betray his stealthy advance from the Porta Pia it would serve only to reveal another admirable facet of Basil Spence's character; for to him, if I know him, a goose has one particular purpose in life and, never mind how Capitoline, would at once be parcelled off to Strasbourg to have its liver seen to.

An embassy is a nation on display through the medium of a building and all that goes to furnish and equip it; what a perfect meeting-place for the architect we admire so highly and the designer whom we now so happily acclaim.

The presentation was made by the Chairman. The Master then proceeded to his final eulogy, of MR. CHARLES EAMES.

Where are the words, winged, unswerving as they must be into the wintry storms of the Atlantic, where are the words whose Olympic truth of aim and tenacity of effort will carry them, however faint, across an ocean and a continent to reach Charles Eames and tell him of the honour and affection in which we hold him and with which we now enrol him among the Honorary Royal Designers for Industry? In furniture the explosion of his genius in designs of the highest originality

and beauty was seen across two continents soon after peace returned, like a brilliant display of fireworks touched off to celebrate some signal success of discovery and exploration. His interior designs are no less original and characteristic and in exhibition design he has found new methods and devices of the most startling impact and dazzling beauty; and these commanding gifts he will lend for the delight of children with equal generosity and with equal certainty of effect.

Taking account of young and enthusiastic as well as of more mature and experienced judgement, I dare say that his is the most respected name in all design to-day, and I might hope the most influential too; for his work has always the stamp of a youthful, clear-sighted and inquiring mind which can open up new prospects, any one of which might lead to unknown, unsuspected treasures of imaginative experience and enjoyment. As it is determined, so it is gay; as it is admirable, so it is lovable; as it is considered, so it is spontaneous; and so its proper place is wherever you may meet it: on that side of the ocean or on this; exemplary in the museum or at work in industry or commerce; a source of private joy or a spectacle for the eyes of thousands; on a mission of goodwill to a foreign power or in playing with cards on the nursery floor.

The very distance that keeps him from our company illuminates my subject. To live and work in Venice, California, argues a prerogative to command the best of the old world and the new. Surely, to enjoy the Queen of the Adriatic among the orange groves of that Pacific shore is to be at the birth (if you will allow the thought) of one of those great legends of Rape and Ravishment which in the age of heroes had princes plucking at their bowstrings and poets at their lyres. The Homeric allusion comes, I hope, appropriately, for I find in the palette of colours which is one of Charles Eames's most characteristic instruments a majority of those which seem to match the vision rather of young eyes than of old, or rather of those who come early in a civilization than of those who come late. In his colour films in particular surely we have come back, or are gone forward, to a world of clear, unsullied light, to a wakening world in the spring of its greatness, the world of the saffron couch, the wine-dark sea, the rosy-fingered dawn.

Without his presence this evening we are not disconsolate; indeed we are unusually honoured to have with us, to receive the diploma on his behalf, Dr. Everett Gleason, Cultural Attaché to the American Embassy. In handing it to him do you, Sir, ask him to use his good offices with the Ambassador on our behalf, to ensure that the words inscribed are indeed ἔπεα πτερόεντα—winged words to fly swift and unchecked on their long passage West; and so we shall send the tribute which is ours to give through Excellency to Excellence.

Mr. Eames's Diploma was accepted by Dr. Gleason. The Chairman then introduced MR. J. CLEVELAND BELLE, *recipient of the Bicentenary Medal for* 1960, *as follows:*

Mr. Cleveland Belle, the Royal Society of Arts has awarded to you their Bicentenary Medal for 1960. As you know, this medal is awarded annually to the person who, in a manner other than as an industrial designer, has exerted an exceptional influence in promoting art and design in British industry. The Council of the Society of Arts unanimously agree that you have well merited this award.

You were the first Director of the earliest Design Centre Institute in British industry —The Colour, Design and Style Centre established by the Cotton Board in Manchester in 1940. Under your leadership that Centre became not only a focus of research indispensable to British industry, but it set a widely influential standard of exhibition design and display, and gave great impetus to improvement in textile design. In another sphere you have exercised a marked influence on fashion design.

I have much pleasure in presenting you with this medal on behalf of the Royal Society of Arts.

At the conclusion of these proceedings, the following Oration was delivered:

LARGER THAN LIFE

by

A. B. READ,

Past Master, Faculty of Royal Designers for Industry

The artist ever searches for truth, and to see and to express even an infinitesimal facet of truth has always been his aim and his greatest reward.

Truth is ever present with us waiting to be recognized and revealed and is hidden from us only by a smoke screen we ourselves have produced. When glimpsed, the form of truth appears so blurred or distorted that recognition becomes increasingly more difficult and more rare.

This is a strident age, a time of blare and noise and over-statement. Values of every kind are continually changing and many are inflated and without meaning. Music stupefies by endless repetition and vicious amplification, peace and privacy are rare beyond price, modesty and reticence are mistaken for timidity or inadequacy and voices have to be raised to shouts or shrieks in order to be audible above the general din. Scale, proportion and colour in architecture and the visual arts become more and more gross and aggressive in the struggle for attention and notice.

Superlatives have become normalities, so that reviews, whether of books, buildings, plays or films are suspect. Statements belie reality and, like the publicity for holiday resorts we are led to expect too much—often too much of what we least want.

The packet is bigger than its contents, packaging more impressive than the product it holds, display more interesting than the exhibit, the car more glittering and glamorous than the occupant and, for self-protection, we establish our own systems of assessment in order to arrive at some rough estimate of fact and truth.

Man's occupations and activities have been upgraded in the stampede for improved status so that an honest trade becomes a dubious profession, the clerk an executive with higher executives above him and above them all, at the summit, those top people. More and more people get higher up the commercial trees, everyone is somebody and no-one's anybody. The conference or the committee have swamped and absorbed the individual, simple decisions involve prolonged discussion, and decisions when made inevitably are compromised or even ineffective.

Somewhere in this complicated industrial and commercial complex the designer has his place and his contribution to make. Honest decent effort alone in this setting is often too unspectacular to be noticed or used, and the designer tends more and more to be caught up in the race for recognition and advancement. His employers and patrons are indoctrinated with contemporary ideas and a pattern has become widely established to which the designer is expected to conform. It becomes increasingly difficult for him to use his talents with integrity, and rigid design standards allow him only restricted opportunities for original and individual expression.

The calm, settled atmosphere of this hall is suited more than any other for reviewing the position and the duty of the designer in the world I have made some attempt to describe. In the House of this great Society, founded for the 'encouragement of Arts, Manufactures and Commerce', we are justified in reflecting on design as it is to-day and what it could be in the years ahead.

Without the standard of workmanship and sense of quality that the designer-craftsman inherited and understood, the designer for industrial production has to-day to design for new materials and processes and also has to collaborate with many other specialists. His influence is so often diluted and his ideas compromised to meet industrial or commercial expediences. The products so often reflect these compromises, and although many are good and some occasionally are excellent there is obviously a crying need for a better understanding of those basic standards of design and quality that have remained, and always will remain, constant and sound. Scale, proportion, appropriate use of material, qualities of shape, surface and colour are but a few of the essential characteristics of fine design.

There is a monotony in the repetition of form common to refrigerators, furniture, heaters or office blocks. Materials of all kinds—metals, plastics, ceramics, glass or wood are used with little consideration for their properties and characteristics. Materials imitate one another and often the originals are forced to mimic their substitutes. Original design seems to have surrendered its liberty and versatility to a somewhat tyrannical and all enveloping style that is becoming wholly international, and in this surrender designers have been submissive and collaborative.

The journals are filled with illustrations and descriptions of products, buildings and interiors looking alarmingly alike. Photographs of their designers bent over their drawing tables are accompanied by case histories detailing the years of study and research, and the months of anxiety and painful labour that led up to the birth of their brain children.

The design content of the product—a tooth brush, perhaps—and the talent of the designer are frequently magnified out of all proportion to their importance and their place in the pattern of our way of life. We are no longer surprised that a product heralded as being fabulous is just passably decent and perhaps moderately useful.

Reasonable standards of design, of quality and of honesty which should be normal are publicized and repeatedly hammered home as being outstanding achievements of a kind of holy alliance of design, industry and commerce.

The present system of art education in this country is to be changed within the

next few years as a result of recommendations in the First Report of the National Advisory Council on Art Education now approved by the Minister. Colleges and Schools of Art will soon have the opportunity and the responsibility of setting up at recognized centres their own examinations for the National Diploma in Art and Design and will have freedom to establish their own courses of training leading to this award.

There has been unanimous agreement that the practice of the fine arts and drawing must form the basis of all art education, including the training of designers. Breadth of experience in the fine arts can give an appreciation and understanding of form, colour, line and quality and a sensitivity to the possibilities of their right relationships that cannot be developed in any other way.

The short cut to specialist competence is no substitute for this longer course of study and broad experience. Designers with this wide art training and with the artist's passionate urge to reveal only the truth could bring new and stimulating qualities to design in all fields. They might be expected to give a lead to industry rather than to follow it. Too much concern with current styles and possible trends leads only to an easy and dangerous reliance on the inventiveness or ingenuity of others. Designers must preserve their determination to be true to their convictions if they are to become vital contributors and not merely old contemporaries. Industry in the face of world-wide competition will need to look for and to find designers of the right calibre who are truly creative and not imitative.

Uniformity is death to design, and conformity, unrelated to purpose and human need, will leave design and designers moribund. The cult of abstraction has led to art without roots and to design in a vacuum. Pseudo-functionalism has become an end in itself to give the semblance of utility; even things made by hand have been forced to have a machine-made look and a slick mechanical finish.

Properties of materials can be appreciated only by handling and working them, and there is now a greater need than ever before for fine things made by craftsmen in order to maintain standards of quality and to exemplify decent uses of materials.

Nothing worth while is designed without love or at the very least some affection and feeling for the thing itself and for the material of which it is made. We must have more evidence around us of design with this sympathy and understanding. Too often designers appear to have had only a nodding acquaintance with the materials they use and frequently torture them as if they positively hated them.

The time may well have come when designers are beginning to sense the joys of non-conformity, the freedom of individual expression and the enjoyment of a little exuberance in their work.

We begin to yearn for things designed with real understanding and affection and not merely with twisted reason and doubtful logic—design that comes a little from the heart as well as from the head. There is the need for a new and more human quality and scale in design and, with it, perhaps a glimmer of some continuity of a national character.

The beatniks protest by their cult of silence and apparent indifference against the exaggeration of a blaring world where words have lost their meaning. In quiet,

modest ways designers are beginning to react and to try and give us things we need rather than things we are expected or persuaded to want. Perhaps we shall see kitchens we could love as well as admire, modern heaters that warm our hearts as well as our knees.

Designing is a modest, decent way of contributing to the happiness of the world and it is no more and no less than that. While truth is screened by a haze of overstatement and where personalities and products are represented larger than life, the designer and the artist can be of the greatest service to industry and to all of us by being themselves, continually searching for truth in all its aspects and preserving at all costs their integrity and their sense of human values and scale.

In a world of clamour a whisper is likely to become more audible and far more effective than a bellow, and in the field of design I begin to hear the murmurings of a new and stimulating discontent and to sense the beginnings of a new freedom.

At the conclusion of the Oration, MR. JOHN GLOAG, *a Member of Council of the Society, proposed the following vote of thanks:*

I am overcome at the honour of having to propose this vote of thanks. I know that nearly everybody who proposes a vote of thanks says that he is overcome by the honour, but I am overcome by other things as well. First of all, by the jocund pliability of the sentences that came out of Professor Goodden. Never have I heard spoken words sound more felicitous. I have read such language in the works of Norman Douglas and other fastidious writers, but never have I before heard such appropriate comments on the work of those whom the Society has delighted to honour. Professor Goodden made me feel sick with envy that I could not command his facility of language, choice of phrase and perfect vocabulary.

Now I come to the second and—with deference to Professor Goodden—even more pleasurable part of my task. I have known A. B. Read for 42 years; he is my oldest friend; and in the past when both of us were slightly more reckless than we are now, we decided how the world could be replanned in terms of better design. He has made an enormous contribution as a personal industrial designer, as a personal executant craftsman; the two things are unfortunately severed to-day. There are very few industrial designers of the calibre of A. B. Read who are themselves executant craftsmen capable of handling materials without attempting 'to make modern materials imitate their originals', a phrase that I shall treasure and use again. There are in the ranks of the Faculty of R.D.I. a large and notable number of executant craftsmen who are also great designers.

Sir, I detected a faint note of pessimism in your oration. Personally, not only as a roaring exhibitionist but as a buoyant optimist, I can see no cause for pessimism about design to-day. More people are arguing about it, quarrelling about it and backbiting about it than since the middle of the eighteenth century; therefore, it is in a perfectly healthy condition. Only when people feel strong, violent and almost obscenely vigorous about a subject, is that subject really vital, one out of which something will inevitably grow. I believe in the age we live in. You supported that belief in a good many directions, Alfred Burgess Read. You said something tonight which will give a lot of people cause for thought; you stimulated a lot of

ideas. You referred to the confusion that the artist often thrusts upon his contemporaries. It was Sir Walter Raleigh, that very great Don, who said:

> The artist is an awful man
> He does not do the things he can. . . .
> He fiddles with the works of God
> And makes them look uncommon odd.

Quite rightly. That is the artist's job, that is the designer's job. It is the job of the designer to wake everybody up, in season and preferably out of season.

I ask everybody here to join me in a very hearty vote of thanks to Professor Goodden, to A. B. Read and to the Chairman of our Society for presiding tonight over this meeting.

The vote of thanks was carried with acclamation, and the Chairman then declared the proceedings at an end.

LEARNING TO READ: AN EXPERIMENT

A paper by

I. J. PITMAN, M.A., M.P.,

Chairman and Managing Director, Sir Isaac Pitman & Sons Ltd., delivered to the Society on Wednesday, 23rd November, 1960, with Sir Arthur Ffforde, M.A., Chairman, British Broadcasting Corporation, in the Chair

THE CHAIRMAN: The honour falls to me to have been invited to preside over the discussion on this occasion, and I have only to tell you that I am not going to do what has been described to me as making an imaginative attempt to embroider the details out of *Who's Who* about Mr. Pitman, for I know him well enough to know he will speak for himself. Having read the paper beforehand, the bit that particularly interested me—although it is not, I think, his main subject—was the transition from having learnt to read by the new method to the later stage of learning to express oneself and to spell in the old. In my short time as a schoolmaster, it always seemed to me that far too much weight was put on the problem of whether boys or girls could spell and not enough on the question as to whether they had anything to say.

This is illustrated by my only anecdote, and it is a very short one. It concerns a sister of mine carrying the same name as myself but whose Christian name was Phyllis. She was and is a good writer. When I explained to her that it was wrong to spell the word 'wife' 'yph' she said, 'Oh, I see; I ought to have spelt it "yff".'

I think everyone would be pleased if I now stopped talking, and left Mr. Pitman to speak.

The following paper, which was illustrated with lantern slides, was then delivered:

THE PAPER

This paper is about a particular augmentation of our familiar lower-case roman alphabet, and about a particular research which is now proceeding, with the object of finding out whether greater success in learning to read will be achieved by children in their earliest attempts if this augmented roman medium were used (Augmented Roman = A.R.) and if the normal medium (Traditional Orthography = T.O.) were withheld until they had developed skill in reading in A.R., and established confidence.

So here is a specimen of A.R. (a 40-sound 43-character lower-case Roman alphabet, produced by the Monotype Corporation as part of their 12 point Ehrhardt type face in lower-case, ordinary and semi-bold, and in majuscule, ordinary and semi-bold).

ŧhis is printed in an augmented rœman alfabet, ŧhe purpos ov which is not, as miet bee suppœsd, tœ reform our spelliŋ, but tœ impr œv ŧhe lerniŋ ov reediŋ. it is intended ŧhat when ŧhe beginner has aċheevd ŧhe iniſhal sucsess ov flœensy in ŧhis speſhally eesy form, his fuetuer progress ſhœd bee confiend tœ reediŋ in ŧhe present alfabets and spelliŋs ov ŧhem œnly.

if yœ hav red aɜ far aɜ ðiɜ, ðe nue meɛdium will hav prœvd tœ yœ several points, ðe mœst important ov whiȼ iɜ ðat yœ, at eny ræt, hav ɛɛɜily mæd ðe ȼhænj from ðe ordinary rœman alfabet wiðh convenʃhonal spelliŋx tœ augmented rœman wiðh systematic spelliŋ.

Authoritative Auspices

The research project in question has been launched as a joint enterprise by the University of London Institute of Education and the National Foundation for Educational Research in England and Wales. Professors Lionel Elvin and W. R. Niblett, the Director and Dean of the former, and Dr. W. D. Wall and Dr. Joyce Morris, the Director and Officer responsible for Reading Research of the latter, form the responsible Committee, together with Professors P. E. Vernon and Sir Cyril Burt, the eminent educational psychologists, and Professor D. B. Fry, the well-known phonetician of University College, London. I myself serve the Committee as an amateur all-rounder.

The Minister of Education, and the Secretaries of the Association of Education Committees and of the National Union of Teachers, have blessed the project. The Press, not only of Britain but of the world, gave it a very fine send-off, when it was announced on 13th June last, and since then many people prominent in education and literature, such as Heads of Departments of Education and English at Universities, Principals of Teachers' Training Colleges, Chairmen and members of Education Committees, Chief Education Officers, have commended the research, and indicated provisional co-operation.

Research Officer

Mr. J. A. Downing has been appointed *Research Officer*. He has a First Class Honours Degree in Psychology, and has had teaching experience in a Technical College, a Special (E.S.N.) School, a Primary, and a Secondary Modern School. He has had several psychological articles published, and was, at the time of his application for the post of Research Officer, Senior Research Officer with Messrs. Lintas Ltd., part of Unilever. He was head of their Psychological Research Unit making investigations and surveys 'using a variety of methods from Social and Experimental Psychology'.

Preparatory Work

There will be a great deal for him to do before the field work in classes with A.R. may begin. The research must be carefully planned, the teaching material decided upon and printed, and the testing programme evolved, before it would be right even to expect to turn the provisional agreement of Local Education Authorities and governing bodies of independent schools into practical commitment. Even then there will be the proviso that the parents and the teachers shall be willing volunteers. This proviso has been deliberately emphasized, because it is fundamental policy that no parent, child or teacher should participate or continue, except knowingly and voluntarily.

Recruiting the Participants

For statistical reliability and a convincing answer from the research, we shall need as many as 3600 child volunteers (2400 in the research classes, using A.R., and 1200 in the control group), and recruitment will involve a corresponding number of parents and teachers.

The Research Officer will thus be faced during the preparatory period with a major task in public relations. Assisted perhaps by others such as myself, he will have to explain the facts of the research fully, and conscientiously, to committees, parents, teachers, and the Press, so that a reasonable and thereby lasting decision may be taken in this important matter.

A Rehearsal

As a rehearsal, I shall now ask you to imagine yourselves to be a meeting of individuals, each responsible, as parent or guardian, for a five-year-old child due to start schooling in a few months' time.

First, I would emphasize to you that reading is a very difficult task indeed for the tender brain of your small child, but nevertheless, well within his or her capacity. Your child has already learnt to understand the English language, of which he knew not a single word five years ago, and only a few words three years ago. An almost miraculous achievement at so tender an age, it indicates that he is not only educable but a linguist who is capable of learning to read. Reading is no more than understanding the printed equivalents of the spoken words which he already understands; and given the same success, self-satisfaction and self-confidence in the beginning, there is no reason why he should not succeed with the written language as completely as with the spoken.

Prevalence of Reading Difficulties

You may suppose (and be snorting contemptuously under your breath) 'Of course *my* child will succeed!' But unless he is exceptionally lucky, and the group exceptionally talented, he will be in a class in which every second child will experience so much difficulty that even after two whole years of work in the 'Infant Department' he will still be stumbling and will pass to the Junior School, doomed either to failure in effective reading, or to a hard and long struggle throughout the next four or five years in the Junior School, which will leave little opportunity for that educational progress which will be the foundation for the all-important 11-plus examination.

In support of this prognosis, the Research Officer would then show this table (V_3) from *Reading in the Primary School*, by Dr. Joyce Morris.

READING STANDARDS AT THE BEGINNING OF THE JUNIOR SCHOOL COURSE (1946 AGE-GROUP)

Standard	*No. of Children*		*Percentage*	
Book 4 and above	1644		54·4	
Books 2 and 3	797	1378	26·4	45·6
Book 1 and below	581		19·2	

You will see that about half the children have not passed even Book III of the reading series they were tackling. (Experienced teachers regard Book IV as the beginning of true reading.) He would then show, say, this page of Book III of one of the series in question as an indication of what even the most successful of the 45·6 per cent find to be within, or nearly within, their ability after two years' effort.

THE PANCAKE

good	after	cook
rolled	every	began

A big fat cook made a big fat pancake.

Near the cook were seven hungry little boys.

What is 'Effective Reading'?

He would, however, probably need to explain what is meant by the technical terms 'backward reader', 'semi-literate', 'illiterate', and 'failure as effective reader'. This audience might find it incredible that in a supposedly literate country there should

be this degree of mass failure, and that evidence should have been published officially to disclose it.

This Latin inscription shows that there are two halves to effective reading—first

SENATVSPOPVLVSQVEROMANVS
IMPCAESARI DIVI NERVAE F NERVAE
TRAIANO AVG GERM DACICO PONTIF
MAXIMO TRIB POT XVII IMP VI COS VI PP
AD DECLARANDVM QVANTAE ALTITVDINIS

Victoria and Albert Museum

SENATVS · POPVLVSQVE · ROMANVS
IMP · CAESARI · DIVI · NERVAE · F · NERVAE
TRAIANO · AVG · GERM · DACICO · PONTIF
MAXIMO · TRIB · POT · XVII · IMP · VI · COS · VI · PP
AD · DECLARANDVM · QVANTAE · ALTITVDINIS
MONS · ET · LOCVS · TAN IBVS · SIT · EGESTVS
[TIS · OPER]

the *mechanics* of visual signalling, the recognizing of the shapes of characters and their phonetic value, irrespective of meaning, and secondly, the *semantics* of the message which the signals are intended to convey in meaning. There will, in this audience, be universal success in the mechanical half—notwithstanding that the passage is in Latin, but in even this audience there will be wide range, in the semantics, from an immediate and complete comprehension to a blank incomprehension—the lack of comprehension arising because it is in Latin, a language unknown to the reader.

As another instance, there are those who can read French, say in *Le Figaro*, but with slow and incomplete understanding. Such people will concede that it requires but little diminution from complete comprehension to render the exercise of reading French irksome—thus they could not read French for pleasure, and in that respect they resemble these non-effective fifteen-, twenty-, even sixty-year-olds who do not read because there is no fun, only hard work, to be got out of it.

With such poor results at the seven-year-old stage, it is not surprising that he will be able to show to the meeting this Table, on page 8 of *Standards of Reading 1949–56* —Ministry of Education pamphlet No. 32—

PUPILS AGED FIFTEEN

Category	*Description*	*Percentage*					
		1948		1952		1956	
A	Superior	9		9		9	
B	Average +	34		39		43	
C	Average −	27		22		23	
D	Backward	24		25		21	
E	Semi-literate	5	30	4	30	4	25
F	Illiterate	1		1		0	
	TOTAL	100		100		100	

which shows that at the fifteen-year-old stage no less than 25 per cent are found to be failures as effective readers, and therefore that one in four of the children in the class will be likely to join their dispirited ranks.

Viewed in this light the headings 'Average +', 'Average −' in the above Table are seen to be irrelevant. Even at the one extreme, in say a Congo village, and even at the other extreme, in a Senior Common Room at a University, the same percentage (50 per cent) would be found to be 'above average' and the same 'below average'. What, however, relatively matters is the degree of ability of the group among which such pair of averages are calculated, and how wide are the departures, in the bottom quartile, from even that average.

Here the Research Officer might show the relevant definition of the standard of effectiveness in reading of a fifteen-year-old, taken from *Reading Ability*, page 34, and repeated in use for *Standards of Reading, 1949–56*.

Backward readers are those whose reading age is below 12·0 *years and above* 9·0 *years.*
Semi-literate readers are those whose reading age is 7·0 *or greater, but less than* 9·0 *years.*
Illiterate readers are those whose reading age is less than 7·0 *years.*

Even the best of those fifteen-year-olds in the lowest quartile have a reading age of only 11+, and the rest of them are even worse, and go down as low as Infant School level—an *absolute* standard well below what the Research Officer's audience would regard as effective.

He could then show what it is to be a backward reader. By verbal coincidence, this may be done by exhibition of a passage to be read backwards:

SIHT DAER OT THGUO UOY

Read from right to left, the meaning is clear to those who habitually read: yet even the habitual reader would shrink from reading a 200-page book printed in that way.

These fifteen-year-olds are deterred in the same way by the mechanics of reading; moreover they are further deterred by the semantics, since because they have never read effortlessly, their vocabulary and so their comprehension is poor, and their reading thus both effortful and unsatisfying.

So it would be fair to put before the meeting the conclusion that reading success for any child is not to be taken for granted. It would also be fair, if impolitic, to point out the undoubted connection between reading failure and emotional disturbance, and some of the educational and social handicaps which follow.

By-products of Ineffective Reading

The evidence is as yet incomplete, but there is a case for suggesting that failure might be the cause of emotional disturbance rather than the consequence. At all events, the high correlation between reading failure and truancy, juvenile delinquency and crime, is an admitted fact.

In short, those present may well be convinced that it would be wise to join the Minister of Education and others in believing that 'this piece of research is timely and well worth doing'.

FUNDAMENTAL QUESTIONS

What benefit may we suppose that A.R. offers to the child when first learning? What are the harmful features of T.O., which we suppose defeat the young child and cause failure? Will A.R. benefit only those who are destined to fail with T.O., or will it enable all the others, too, to learn T.O. even more successfully? If a seven-year-old child has learnt only A.R., how will he fare when he comes to tackle T.O.? Will anyone be worse off?

These questions must be asked and pressed to the full rigour of cross-examination.

I will not here traverse the ground which has been covered in articles in *The Times Educational Supplement* (29th May, 1959), and the *Teacher's World* (26th February, 1960), but attempt to-day answers from a rather different angle.

Teaching Methods

It is important to appreciate that 'teaching method' is not involved. The teacher is free to teach any subject, including reading by A.R., in whatever way he thinks best.

The mere fact that A.R. lends itself much better than T.O. to a 'phonic' method is immaterial to the question whether the teacher should use a 'phonic' rather than a 'look-and-say' emphasis. Equally, the fact (as will later be shown) that A.R. also lends itself better to 'look-and-say' than T.O. is no reason for discarding a belief in the importance of a phonic approach.

It has been suggested that it could be a mistake to examine in a single research

two different factors because any success in using A.R. could in the event be attributed either to the one—the phonic element and the improvement which makes reading easier when tackled phonetically, or to the other—the look-and-say element, which makes reading easier when tackled that way; and there would remain uncertainty as to which of the two was the remedial factor. However, it is now generally accepted that in the learning processes of the child, the look-and-say and phonic factors become integrated in a timing and proportion which varies from child to child. Since, therefore, the learning of reading is a whole in which both factors must play a part in a very variable combination, it is wise that the research should use both factors in the evaluation of any new medium (and A.R. is a new medium, not a new 'teaching method') and with a variety of teaching methods which introduce various emphases and timings of them. It is essential therefore that these two elements should be allowed to play their part.

The initial emphasis will in all probability be towards 'look-and-say' rather than phonic, because this enjoys the greater favour at present among teachers of absolute beginners.

I, at any rate, welcome this, not only because I believe it to be the better 'point of balance' of the two, but also because my belief is that A.R. lends itself so well to look-and-say, initially as well as in the later stages, because by discarding capitalization it eliminates variants. T.O., by contrast, is (although we have hitherto failed to recognize it) an unfavourable medium for look-and-say because of these variants; for the essence of look-and-say is the establishment, by repetition, of a visual pattern of print upon paper in association with meaningful and interesting messages.

Variety of Pattern

If the success of look-and-say is based on association by repetition, clearly that association will be established in the memory more slowly if the visual images be unstable and capriciously varied. Take any sentence you like.

Take	any	sentence	you	like
Take	any	SENTENCE	YOU	Like
take				
take	Any	*sentence*	*you*	*like*
TAKE	ANY			LIKE
take	*any*			
Take				

The first three words alone have fifteen forms, of which eleven are everyday occurrences. In any child's reader you will find on the front cover, and in the first few pages, many variations of even the common conjunction 'and'. In two of the most

popular there are no less than three in each, which have been presented to the observation of the child, including the ampersand '&'. One of the shortest and easiest words of the language, the indefinite article, has three look-and-say varieties, A a ɑ. The definite article has six. Here is a list of the ten most frequently occurring words in the speech of your children:

THE The· the *the* *the* *The*	6
OF Of *of*	3
AND And and and &	5
TO to *To*	3
A a ɑ	3
IN In in *In*	4
THAT That That that that *that* *That*	7
IT It it *It*	4
IS is *is* *Is* *Is*	5
I *I*	2
	42

Note the instability of their forms in T.O. No less than 42 forms for 10 words, of which 29 confront the child in his normal experience.

It would seem that A.R., with its deliberate standardization of form and elimination of variety, has much to offer to the look-and-say beginner. Every spoken word in your child's vocabulary will be represented in A.R. by *only one* visual image: always stable, the task of associating pattern with meaning (or—even unconsciously—in a series relationship, printed word to spoken word and so to meaning) ought to be incomparably easier. The exact amount of difficulty engendered by the variety of form in T.O. must of course be determined experimentally by the Research Officer. But it can hardly be doubted that the difficulty exists.

PHONIC CONSIDERATIONS

It is, at any rate tentatively, supposed by neurologists that the store of meaningful associations in the brain-cells is more closely connected with the ear and mouth than with the eye and finger, because language is first learnt by ear, and that further additions to the vocabulary, even when first met visually, are usually translated into an ear-and-mouth activity before reception into store.

There are many instances which show the extent to which our reading habits persist in remaining auditory.

I must here be silent so that you may use your eyes alone in considering these next sentences. Lady smocks grow mauve and mauver, then the winter days are over. You may have read that in the *Sunday Times* of 18th September, 1960. Poor silly old Headle he jabbed in the needle and drew out a gallon of blood. The blood was all runny and mixed up with honey and trickled away in the mud.

I may now speak again to confess that the second of these two you cannot possibly have read before, because it is nonsense, which I have created for this very purpose.

Silent Hearing

May I not confidently suppose that, although you did not expect a poetic sentence, though the rhymes and line divisions were contra-indicated by the visual patterns, and that the form of the printing appeared to deny the presence of any break with the prose, before it or after it, you will all have picked up the scansion, the metre and the rhyme as being verse, and proved that you are one and all auditory as well as being visual? In other words, even the most visual of us cannot escape from our auditory upbringing. May I be silent again, while I ask you to count carefully the number of *efs* in this sentence:

> These functional fuses are the result of scientific
> investigation combined with the fruit of long experience.

I resume speaking to warn you that if you have not counted six, you have counted wrong. Try again. . . . There *are* six.

Unless the trick was known to you, you will probably have omitted to count the *efs* in the two words 'of'. You will, I suggest, have been auditory rather than visual, and will have counted only what you heard. Again, what about the auditory puns of Messrs. Wallace Heaton on the rear of London's 'buses, such as meet our eyes when the leaves are turning colour: "This autum—ake them happy—Home movies"?

A Two-legged Progress

Your children, not being deaf mutes, are auditorists, no less than visualists. The very benefit of alphabetic writing was that it enabled these two aspects of human capacity to supplement each other in reading. Even if taught entirely by look-and-say, the child will nevertheless, at his own time, begin to discern and take advantage of the alphabetic nature of the material, and so extend his reading vocabulary to the full potential.

The wonder is that any child should learn by a phonic approach since T.O. is as unsuitable for phonic as it is for look-and-say.

For a phonic approach there must be a relationship, not a dis-relationship, between the word symbol when spoken, and the word when printed: but T.O. is full of dis-relationships—and of two kinds—those which falsely imply a relationship which is not there, e.g., between **Reading** and **Reading** (**redig, reedig**), bone, done, gone, one (**bœn, dun, gon, wun**) etc., etc., and those which falsely imply a

dis-relationship when there is a relationship, e.g., between **many** and **penny** (**meny**, **penny**), **over** and **mauver** (**œver**, **mœver**).

It is advisable to point out that a phonic approach does not consist in making children speak *duh*, *uh*, *nuh—dun*, but in developing the child's ability to tackle an unknown word (say the invented word *Poppollington*) by relating its parts, its syllables, to the syllables of words which have already been mastered.

The range of syllables in English usage is more limited than we suppose. Certain syllables are not used, and certain others are much commoner than the rest. There are 220 very common syllables. A beginner therefore may enjoy very good opportunity and practice in such common syllables, and, if the spelling be systematic, may be helped thereby to develop, with relatively little work, a visual-to-meaning relationship over a field as great as 70 per cent of the language. These are related: **band** and **sand**, and cross-related to **bend** and **send**, etc. Here, instances of systematic spelling have been chosen. The point is, however, that so often the misleading spellings of T.O. deny to the child the opportunity easily to build on such syllabic relationships and cross-relationships which A.R., in contrast, consistently affords.

T.O. Fails the Child Auditorily

After all, what can the poor auditory element in every child make of much of T.O.? He recognizes the syllabic relationship of **go**, **so**, **no** and then finds that any auditoriness in these consistent three, is thrown into confusion by **do**, and by **who**.

The degree of the unreliability of T.O. in the commonest syllables can be exemplified only by the use of a consistent spelling—as, for example:

wuns: once — **aut**: ought — **aul**: all — **hɷ**: who — **wɒz**: was.

Auditory Assistance

These T.O. forms may be seen to be the real shockers which they are, particularly when we realize that A.R. has tried to differ as little as possible from T.O., while yet not departing from consistent spelling. In this attempt the design of A.R. has been based on the analysis of phonemes and their most usual spellings which is set out in *New Spelling* (by Ripman & Archer, revised by Professor Daniel Jones, Professor Lloyd James, Mr. Harold Orton, Mr. Walter Ripman and myself, under the Chairmanship of the late Sir Gilbert Murray) which, with that purpose in mind, objectively determined the most *apparently* auditory of English syllabic forms.

Perhaps now, I may introduce the A.R. itself, in its alphabetic (rather than phonemic) form:

The Augmented Roman Alphabet by rote

43 characters

1.	æ	*æ*	ae	25.	ɤ[1]	*ɤ*	zess
2.	b	*b*	bee	26.	wh[1]	*wh*	whae
3.	c[1]	*c*	kee				
4.	d	*d*	dee	27.	ʤh	*ʤh*	chae
5.	ɛɛ	*ɛɛ*	ee	28.	ʧh	*ʧh*	ith
6.	f	*f*	ef	29.	ȝh	*ȝh*	thee
7.	g	*g*	gae	30.	ʃh	*ʃh*	ish
8.	h	*h*	hae	31.	ʒ	*ʒ*	zhee
9.	ie	*ie*	ie	32.	ŋ	*ŋ*	ing
10.	j	*j*	jae	33.	ɑ	*ɑ*	ah
11.	k	*k*	kae	34.	au	*au*	au
12.	l	*l*	el	35.	a	*a*	at
13.	m	*m*	em	36.	e	*e*	et
14.	n	*n*	en	37.	i	*i*	it
15.	œ	*œ*	oe	38.	o	*o*	ot
16.	p	*p*	pee	39.	u	*u*	ut
	q		(kue)	40.	ω	*ω*	oot
17.	r	*r*	rae	41.	ɷ	*ɷ*	oo
18.	s	*s*	ess	42.	ɷu	*ɷu*	ow
19.	t	*t*	tee	43.	ɷi	*ɷi*	oi
20.	ue	*ue*	ue				
21.	v	*v*	vee				
22.	w	*w*	wae				
	x		(eks)				
23.	y	*y*	yae				
24.	z	*z*	zed or zee				

[1] The three characters so marked provide alternative characterizations for **k**, **z** and **hw**. Their use is conservative of present orthography at little cost—because of their visual relationship to their alternative forms.

As stated on p. 169, the Committee has decided to prefer **c** as *kee* in lieu of **ƈ** for use in the experimental classes. The character **c** is used on pp. 171 and 172; **ƈ** used on pp. 173 and 174.

It will be noted that it has been arranged in order 'by rote' on the supposition that some teachers and parents may insist on teaching the alphabet by rote, even at that early age. It is not necessary so early to teach it thus, but thanks to this arrangement and nomenclature, wall charts can be provided which will allow the letter order of the 26-character roman alphabet to be retained: the extension beyond zed, the re-

naming of Nos. 35–39, and the substitution of the appropriate characters in the place of a, e, i, o, u and the re-naming of seven characters, which at present are misleadingly named (e.g., aitch becomes hae), enables the 43 characters to be taught, if so desired, on the foundation of the existing 26-letter order.

The points to note are: (i) it is wholly lower-case; (ii) all but three of the roman alphabet characters have been retained; (iii) there are 15 augmentations, which are linked visually and auditorially to T.O:—two, ʒ (zess) and ƙ (kee), which are visually linked respectively to z and s, and to k and c, and only three which are at all unusual. In all there are retained 23 roman lower-case characters, and there are 20 augmentations—a total of 43 characters. (With c in lieu of ƙ there are 24 retentions and 19 augmentations.)

Why Lower-case?

Lower-case characters have been chosen because they are those with which the child will be most frequently confronted in books; and because the presence of ascenders and descenders (i.e., letters going above or below the x-line) endows each printed word with a more discriminating characterization and makes them more legible than would capitals.

The Augmentations

Fourteen of the 20 augmentations are 'digraphic' (e.g., æ, þh). Although they each stand on their own as a character (as w equally does to a beginner) they appear to those already conditioned to be a combination of two other characters. In every case those two other characters are the two which the objective study of Ripman & Archer (referred to above) showed to be the most usual in the representation of English speech syllables, and therefore the most auditory. Just as w has been accepted by beginners as a character standing on its own, and is not regarded as a digraph (which it is in fact—vv) the child may be expected to have no difficulty in accepting these digraphic characters as being single 'characters', essentially characteristic (e.g., that þh is the character *ith* without associations to the quite different characters t, h and ƭh).

The other six augmentations are not digraphic—because there is no need for them to be; they therefore occasion even less disturbance. Ripman & Archer, having imposed upon themselves (for the practicability of printing in *any* printing office) a limitation to characters

ordinarily found in the printer's case (or typewriter), were forced to recommend a number of additional digraphs—e.g., dh, aa, etc.—which they had to admit were disturbing innovations in T.O.—e.g., their **faadher**—Whereas the cutting of new type forms allows A.R. to print **father** in which **a** and **th** are augmentations.

The 'Top Coast-line'

It should also be appreciated how skilfully the Monotype Corporation have managed to locate in the lower half of the line of print what are the discriminating features of the new characters, and thus have left almost undisturbed what might be called the 'top coast-line' of words and sentences. The discrimination at the lower level is well placed for the young child whose early study will be of the whole—both bottom and top; the non-discrimination at the higher level is well placed for the child once he has become familiar with word-forms, and is no more than glancing at the print—and then only at the 'top coast-line' of it.

The degree to which the 'top coast-line' is important to the sophisticated reader and the lower half less important may be shown in the next few lines.

When masked at the bottom the result
is easy to read: which masked at the
top it is seen to be harder to read.

(*When masked at the bottom the result is easy to read: when masked at the top it is seen to be harder to read.*)

Similarly here is the same treatment applied to the specimen on p. 149:

this is printed in an augmented roman alfabet the purpos ov which is not as miet bee supposd to reform our spellin but to improov the lernin ov readin it is intended that when the beginner hav achevd the inishal sucsess ov fleuency in this speshally easy form his fuetuer progress shud bee confiend to readin in the present alfabets and spellinz ov them only

If you hav red as far as this the ride meetodh will hav proovd to you several points the most important ov which is that you at eny rate hav easily made the chanj from the ordinary roman alfabet with conveniional spellings to augmented roman with systematic speling.

If you look again at the specimen you may note what elements have contributed—and how—to the feature of very easy reading, which invariably comes as a pleasant surprise to those confronted with A.R. for the first time.

This feature is likely to recommend it to parents, and also augurs well for easy transition from A.R. to T.O.

Before, however, we consider the question of transition from A.R. to T.O., there are two important further points both linked with sound rather than with character. Here, then, are the (40 + 1) sounds:

The Alphabet by Sound

40 (+1[2]) sounds characterized

(phonemes)

	Consonants			Vowels and Diphthongs	
1.	puh	p, pp	25.	ak	a
2.	buh	b, bb	26.	ahd	ɑ, ɑr
3.	tuh	t, tt	27.	ek	e
4.	duh	d, dd	28.	aed	æ
5.	kuh	k, c[4], c[4]k, cc[4]	29.	ik	i, y, e, æ,[3]
6.	guh	g, gg	30.	eed	ɛɛ
7.	fuh	f, ff	31.	ok	o
8.	vuh	v, vv	32.	au	au, aur, or
9.	thuh	ʇh	33.	uk	u
10.	dhuh	ɲh	34.	oed	œ
11.	suh	s, ss	35.	ook	ɷ
12.	zuh	z, zz, ƨ, ƨƨ	36.	oo	ɷ[1]
13.	shuh	ʃh		urd[2]	er, ir, ur, yr[2]
14.	zhuh	ʒ		uh[2]	a, e, o, u, ue,[2]
15.	chuh	ʗh, tʃh, tion, tuer			ar, er, ir, or,[2] ur, yr, uer[2]
16.	juh	j, jj, dʒ	37.	ied	ie
17.	muh	m, mm	38.	ou	ou
18.	nuh	n, nn	39.	oi	oi
19.	ung	ŋ	40.	ued	ue[1]
20.	luh	l, ll			
21.	ruh	r, rr			
22.	wuh	w, (wh)			
23.	yuh	y, i, ue[1]			
24.	huh	h			

[1] These three are linked. ue = y + ɷ.

[2] The neutral vowels urd (long) uh (short) for which the characters ɯ and ɑ are available (but are not intended to be used in A.R.), are to be represented by a number of alternatives, e.g.—

urd: fern, stir, burn, myrtl (cp. ferry, stirrup, burrœ, myrriad).

uh: sœfa, ɲhe man, kiŋdom, minimum, ferruel, pillar, faɲher, eliksir, auɲhor ɑrɲhur, mɑrtyr, figuer.

[3] The unstressed ik is represented by the alternatives— ʗhænjeƨ, mundæ, in addition to i & y.

[4] If the form ⊏ were substituted for c—see page 169—the alternatives would be k, ⊏, ⊏k, ⊏⊏.

Alternative Characterization

This additional volume of characterization reading-wise was recognized from the outset, but in designing anything it is impossible, in the one design, to gain the best of *all* worlds, and it became apparent that a concession would be worth making for what appeared to be substantial advantages in other features: and that the concession of somewhat larger volume reading-wise was likely—if chosen with discretion—to be a concession more in theory than in practice.

After all, to allow more than one character for a single phoneme does no great harm—certainly one not to be likened to allowing a single character to represent more than its own single phoneme. For instance, in numeration, the ability to choose between 2 (*Arabic*) and II (*Roman*) may even be an advantage: in great contrast, however, we must note the confusion, were there to be uncertainty whether to read 2 in three values, e.g., as 2, or as 5 or 7 (as **a** may be read in **pallid**, **pall**, and **any**)—a confusion which would clearly continue the present almost intolerable burden on the child, and be a rejection of the very principles at issue. No such concession has been made. Thus the concession in permitting a more than one-for-one characterization, and its supposed difficulty reading-wise, is a very different matter, and one of an order which can be shown to be probably insignificant, because easily tolerable by the child—particularly in view of the close relationships either visually or orally, or both, which, in the great majority of the cases, underlie the alternatives.

The form of **letter**, with its double 't's', ought to be an easy alternative reading-wise to **leter**, because of the clear visual relationship and because tautology can be a positive help. Moreover, while in T.O. the two *dees* and the two *ens* in **midday** and in **innate** have a relevance, it is no handicap that in **midden** and in **innocent** they have none, at any rate in practical comprehension. The second *juh* in **judʒ** does not differ in sound from the first, but *juh* is in fact made up of the two phonemes *duh* and *zhuh*, and so the two final characters for *juh* in **judʒ** do no more than establish a two-for-one relationship which reading-wise is no more than an extension of the alphabetism of **d** and **ʒ**, and—if at all—only a minor addition to the volume of characterization. Similarly, in **witȟ** and **whiȟ** we could split the two sounds of *chuh* in the first case into their constituents *tuh* and *shuh*, but we may here do even better and reduplicate the *tuh* by allowing *tuh* to remain in front of *tuh shuh*; i.e., **witȟ**. Again, for the Southern child (who

pronounces no aspirate in **hwen**) the form **when** is read as an easy alternative to the first syllable of **wenxdæ**. Again, in the sounds of **corn**, **faun**, it is true that a Southern child will require to learn two characterizations—but what of two?

Hundreds of Alternatives in T.O.

There are, in T.O., no less than 44 alternative characterizations for only the two sounds **ie** and **i**, varying from *aisle*, *eye*, *sign*, *choir*, *buy* to *bye* for the one, and from *village*, *surfeit*, *definite*, *women*, *business* to *physic* for the other. If all the vowels and consonants were to be so treated in relation to T.O., there would be shown a formidable total of alternatives facing the young child. A. J. Ellis gives a total of 365 (379 – 14) 'heterotypic representations', as he calls this volume of alternative characterizations of our T.O. His list is not complete, but it shows an average of nine for each of our 40 phonemes.

But that is not all. The child needs eventually to learn the alternative word-forms produced by the variant characters. He has to recognize **A** and **ɑ** as variants to **a**; and to recognize **B** and as variants to **b**, etc. A total in excess of a thousand! An average of some thirty different characterizations per phoneme is thus seen to be the task of the child in T.O. At least 75 per cent of our children achieve this miracle, so there must be a degree of tolerance for that departure from the perfection of single representation per phoneme here deliberately accepted. It is surely clear that any child who will eventually cope with such a volume of alternatives will be able to learn easily the very modest volume of alternatives set out in the table (only 88 in total for the 40 + 1 phonemes), all (or all but one) of which are so obviously related to one another that learning will be almost, if not quite, automatic.

Is A.R. Too Simple?

Indeed, it is probable that a bigger volume of characterizations reading-wise would be tolerable. Indeed, at the end of the research, when the A.R. alphabet is itself subjected to critical examination, it is more likely that the issue of a change will turn on whether there are advantages in increasing somewhat the volume of characterization rather than in seeking to reduce it.

The consequential advantage from this admission of a small and selective addition to the volume of characterization per phoneme is

great from two points of view—that of the likely greater ease for the child in making the transition, and that of the acceptability of the medium by the sophisticated reader. If the child will need to transfer to the visual image **letter**, why—if little good is done—present him with **leter** ? After all, tautology is not mis-characterization. Moreover, what significant advantage reading-wise is there to him anyhow? The advantage in a one-for-one relationship comes mainly 'writing-wise'—and when it comes to writing (as teachers will be the first to point out) the young child not seldom writes **leter** at present, even when taught T.O. **letter**, and no teacher begins to take him seriously to task until he has passed the reading stage—which is after he has reached the target which we have defined. If he needs to read eventually **judge**, **witch**, **when** (and **wen**), **corn** and **fawn**, **pity**, and **pitiable**, what advantage is there in not using the **judʒ**, **witɧ**, **when**, **wen**; **corn**, **faun**; **pity**, **pitiabl**, which will be more like T.O. (to which he must become accustomed)? Moreover, such forms are in some cases more correct—certainly for the child of Irish or Scottish parents.

Pronunciation and Spelling

The mention of pronunciation leads to the consideration that further conservative advantages have been thereby achieved. A.R. is, for instance, based on that carefully articulated, sometimes Scottish, speech which is widely understood and accepted when delivered from public platforms, the stage, over the radio, or on the talking film, but which, it must be admitted, probably no child speaks in precisely that form. For instance, **fern**, **burn**, **torn**, **when**, **mundæ**, **delicæt**. The effect is very conservative. The sound and the grammatical context in, 'He said *to* me that he could see clearly close *to*, but needed glasses *to* see at a distance', are in the speech of most speakers different. It is nevertheless proposed to represent all three of these identically. 'Close *to*' and 'close *to* me' are in meaning and syntax the same, even though their sounds in colloquial speech vary. Likewise, '*to* see' and '*to* me'—although they are different parts of speech—sound the same. When he comes to T.O., the child will need to read only one form—'to'—and it would surely be wrong to suggest that we should confront him with more than one form in A.R. The ability to read *the intended meaning* from 'to' in 'close *to* me' and 'close *to*' is both auditorily and visually aided by maintaining a common form.

A.R. does not attempt to follow other variants in pronunciation. 'ɪɑrn I have the jam?' 'Don't say ɪan I have, say *may* I have . . .' The accent on ɪan has changed its sound (from ɪɑrn to ɪan) but not its meaning. A.R. uses only one form— **can.**

The Neutral Vowel

Similar considerations apply to the neutral vowel. Compare:

pœlar	but	pœlarity
deter	but	deterrent
sir	but	sirra
auʃhor	but	auʃhorrity
ueʒuery	but	ueʒuerius

We can hear the neutral vowels (short and long) in the words in the left-hand column, and can notice how in every case the sound of the neutral vowel words in the left-hand column reverts to that pronunciation which the form of the root-word and its derivative in T.O. appears to indicate. There is thus seen to be reason for conserving **er,** etc., in fern, fɑʃher, etc., etc., by treating the problem of the neutral vowel as has been done in A.R. and as illustrated above—giving though it does the four alternative characterizations for the long *urd* (ɯ) and twelve for the short *uh* (ɑ), as shown in our Alphabet by Sound.

Print, a Standard Form

Print is not personal like speech, but mass communication all over the world—and should, I consider, carry a standard relationship between the visual and the meaning, giving an English-speaking-world-standard-form for what is an English standard meaning. Print should therefore disregard dialect, individual idiosyncrasies, and contextual and emotional departures from the normal.

It is not an argument for diversification in print that speech itself is diverse. The very essence of speech is that it shall be personal and individualistic in order to indicate much ancillary information which otherwise would not even be indicated, but which print is able specifically to convey. Print is able to overcome many of these disadvantages under which speech labours—disadvantages caused by the fact that inexorable and uncontrollable time has decreed that while *scripta manent, verba volant.*

Speech, a Personal Form

The voice of a woman, the differences of sounds between the voices of one man and another, the tones of irony, of banter, and of affection—speech has its means of indicating (even if not of precisely conveying) such information with corresponding

convenience and economy. Without meticulous phonetic transcription, print cannot hope to convey the sound of such speech differences; nevertheless it is able, with format (e.g., printing the name of the persona dramatis within brackets) to convey —and with certainty—from whom the message proceeds.

Again, format may be used in print where variation of sound is used in speech. Emphasis may be indicated by italics, bold type, or spaced type.

In shorthand, the experienced reporter, hearing an ironical tone, will indicate the fact positively in his notebook, and will use third person reporting to record that, '*speaking jocularly*, Sir Arthur fforde told his audience that Mr. Pitman, and the whole audience, were clearly off their rockers!'

No attempt has been made in A.R. to indicate such ancillary features of speech —even stress. This latter would involve diacritical marks, which surely are unsuitable for children at the beginning. Print ought, I suggest, to seek to record any (but only one) common norm which is one of those clearly understood throughout the width of the English-speaking world, and ought to do so with a minimum of frills. In abolishing the dis-relations of T.O. we ought not to go too far. The purpose is not to transcribe speech differences, but to teach the recognition of print, and establish a working relationship between print and meaning, linked not all that perfectly to the speech.

Comprehension, the Objective

It would be a great mistake to confront the young child with diversified forms, seeing, moreover, that standard forms have worked for centuries, and that there is no evidence that the child has suffered—indeed, the probability is that he has gained. It must be desirable to confront him learning-wise with that A.R. form which looks most like that standardized lower-case form of T.O.—and an A.R. form which is immediately *effectively* auditory, because it represents the speech of someone who, if speaking that form, would be easily understood by the child. What Bernard Shaw said about speech is no less true about characterization: 'The vowels used by the English "are as various as their faces, yet they understand one another's speech well enough for all practical purposes". It is comprehension which matters.'

At any rate, that is what is proposed for A.R. in the research. It happens that it is also that policy which was adopted both in Pitman's shorthand (and proved in use over a period of 125 years) and by Ripman & Archer in their *New Spelling*. The A.R. spelling is based on their *Dictionary of New Spelling*—though of course amended, *mutatis mutandis*, for the departures which the cutting of special type has made possible—and my preference in a few instances for the vowel classification used in my grandfather's shorthand, a classification which has been accepted and proved for so long, and in all English-speaking areas of the world.

A further point of conservation has to do with relationship between visual images. Clearly some of T.O.'s upper-case letters resemble their lower-case equivalents. For instance, S, s : C, c are clearly related; F, f : X, ∝ while less closely related, are yet more closely related than is A to a or B to ß. It would seem probable that the young child

can see the resemblances of characters, even if they are different, provided the difference is not too great.

If so, then (*zess*) ꞩ has much to relate it with (*zed*) z, and (*kee*) ꞓ with (*kae*) k; also (*wae*) w with (*oot*) ω and (*oo*) ꝏ. Admittedly, ꞩ and ꞓ add to the number of sounds with more than one characterization, but there is thought to be a three-cornered visual relationship of

close enough to justify the alternatives, and to yield a further conservation.

In the case of w, ω, and ꝏ there are three different sounds and three different characters, and so there has been no departure from the one-for-one relationship: it is rather that the similarity of the three sounds can conveniently be matched by a similarity in the three characters.

A comparison of the specimens on pp. 149, 171, and 172 (in which c has been used for kee) with the specimens on pp. 173 and 174 (in which ꞓ has been used) shows how great is the conservation were c adopted: moreover, the facts disclosed by Ripman & Archer of the incidence of k and c to represent the phoneme *kuh* in T.O. make it apparently worth while to accept the tentative opinion expressed above, that there is a margin of further tolerance by the child for alternative characterizations and to adopt c (rather than ꞓ) in parallel with k for the material to be used in the experimental classes. This will be the only departure from the principle—evidenced in all other cases—that alternative characters must be either visually or aurally in apparent relation. Reading is, after all, a practical art in which principle ought not to be pushed to theoretical extremes.

So much for the alphabet, which is largely an adaptation of the original designs of Sir Isaac Pitman and A. J. Ellis.

To sum up: the stability and invariability of the A.R. forms ought to help the look-and-say teachers, and *all* children: the fresh characters and their auditoriness ought to help the phonic teacher, and that auditory element ought to help *all* children: the visual and the auditory ought to supplement each other, and make reading easier for *all* children—not merely for those who now fail, but also for those who now succeed.

At What Price?

There remains then the question whether those who more easily learn to read in A.R. will need to pay any price for such success. Will they encounter difficulty at later stages in learning to read T.O., in learning to spell correctly in T.O., and in grasping the etymological roots which are present in T.O.?

At present, children aged between five and seven are continually mis-spelling words—not to mention other 'children' of all ages! Correct spelling is the product of much reading and much writing, both of which can begin only when the mastery of the reading of those words has been gained. Correct etymology needs to be taught and then to be developed through fluency in speech and reading with its consequent experience. As in the case of spelling, it is best taught after the transition. At this still tender age they are equally unaware of etymology. A few infant prodigies may be aware of the relationship of 'synthesis' to συνθεσις, but even they will need to have been taught it, for its relationship in print is certainly not there. But if it were desired to teach it to the very young before transition, correct etymology is learnable regardless of reading ability. Take the case of **synthesis** (*English*) and συνθεσις (*Greek*): not only is there no visual relationship between the **syn** of T.O. and the συν of lower-case Greek writing, and also a poor relationship auditorily between **suen** and **syn**, but the relationship may be taught (in speech) to an illiterate. In speech, the English form **næʃhon** may be taught as related to the French speech form **nasyon** (and this can be apprehended by a blind man able to speak both French and English). From this emerges the conclusion that such relationships may be successfully taught regardless of form—whether A.R., T.O., or any other. In any case, within the relationship of visual forms what more dissimilar basis for visual relationship could there be than **synthesis** (*English*) and συνθεσις (*Greek*)?—unless it be **nation** (*English*) and **NATION** (*French*)! Etymologies may indeed be taught before transition to T.O., but there would seem to be no advantage and no need to teach them thus early.

Spelling Habits

There remains the question whether, having learnt to read **ov** first and **of** later, there will be a tendency for the child to carry over A.R. habits, if formed (perhaps the teacher will be at pains to reduce any habit formation), into T.O. writing. The research will need to ascertain

the facts, but at any rate it may be observed that habits seem to compartmentalize themselves. No one carries over his first writing habits automatically. Everyone uses discretion in the choice of forms. There are six forms of the definite article, but the right choice is always made: the fact that, say, **the** was learnt and habituated first does not condition the child against the others. **THE**, **The**, and the rest apparently take their place naturally. After all, a bilingual child is able to switch from French to English, and vice versa, without any confusing carry-over, just as we so switch from lower-case to upper-case and vice versa. Perhaps teachers may be at pains to avoid habituation in **ov**, **wuns**, **aul**, etc., by selectively stimulating the writing of the wholly regular **but**, **did**, **had**, **got**, etc., and the almost regular **ðe**, **been**, **which**, etc., but it would appear to be an unnecessary precaution: spelling, like etymology, may—it would seem—be taught best (and as effectively taught) when reading has been achieved.

ðe tranzišhon

hou will ðe seven-yeer-ęld ċhield fær when fæst with T.O.? Will skill in ðe wun meedium bee transferabl tœ skill in ðe second, mor compleks wun?

ie ask yœ tœ follœ mie wurdz in A.R. upon ðe screen. in ðe tranzišhon from A.R. it iz important tœ reealiez ðat ðe ċhield will lern, not a hœlly unnœn printed laŋgwæj but wun with which hee iz aulredy lərjly familiar. Sœ littl nue lerniŋ iz involvd ðat ðe tranzišhon prosess aut tœ bee regarded az adzustment rather ðan nue lerniŋ.

an iŋgliſhman landiŋ in **nue York** duz not lern a nue spœken laŋgwæj az a **frenċhman** wood: hee simply adzusts hiz ekspectæſhonz tœ a fue ċhænjez in a speeċh with which hiz eerz ar utherwiez familiar. liekwiez ðe ċhield will simply adzust hiz ekspectæſhonz tœ a fue ċhænjez in a ritten laŋgwæj with which hiz iez ar familiar. indeed, ðe degree ov adzustment tœ ċhænj in print laŋgwæj iz probably less for a ċhield ðan ðat rekwierd ov an iŋgliſhman heering **a**merrican speeċh, or ov an **a**merrican, viesi versa.

wee hav œnly tœ represent iŋgliſh and **a**merrican speeċh in parallel lienz, in ðe **i**nternaſhonal **f**onetic **a**lfabet, tœ see ðe degree ov differens.

Am: Pɔl pæst hər fɔrti fərtl eikərz ɑv nu:li græst pæstʃər nɑt lɑŋ
Eng: Pɔ:l pɑ:st hə: fɔ:ti fə:tail eikəz ɔv nju:li grɑ:st pɑ:stjuə nɔt lɔŋ
A.R: paul past her forty fertiel æcerz ov nuely grast pastuer not loŋ

Am: æftər Meri gɑt ðær
Eng: ɑ:ftə Meəri gɔt ðeə
A.R: after mæry got ðær

Commuenicæʃhon at a meetiŋ ov Commonwelþ premierz iz effectiv; ɛɛven ðhœ Canædian, australian, indian, West african, and iŋgliʃh pronunsiæʃhonz introdues ċhænjez ov græt varieety, az well az ov degrɛɛ. ðhus, ðhe ability ov ðhe hueman ɛɛr and bræn, az it wær tœ tuen in, and sœ tœ reseɛv laŋgwæj meɛniŋfœlly, cannot bɛɛ in kwestion.

ie and bræn

Cleerly ðhe ie and bræn can dœ liekwiez: ɛɛven mor sœ becauz whielst for ðhe ɛɛr, ever-flieiŋ tiem cuts ʃhort ðhe siftiŋ ov probabilitiz and forþwiſh destroiz ðhe opportuenity tœ recaptuer ðhe evanesent sound, for ðhe ie, spæs allouz az muċh tiem az mæ bɛɛ dezierd and mæntænz in permanent record ðhe printed patternz whiċh ðhe ie mæ rɛɛ-vue, and ðhe bræn study, ad lib.

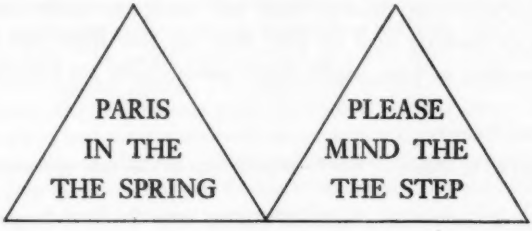
meɛniŋ and Contekst

nor must ðhe value ov contekst bɛɛ œverlœkt when estimætiŋ hou ɛɛzy ðhe transiʃhon will bɛɛ. Wurd-patternz whiċh inclued diegrafs (e.g., ðh, ċh, ŋ, etc.) wœd present nœ difficulty. for egzampl when ðhe ċhield'z sens ov probability forseɛz ðhe definit articl, and ðhen hiz iez fiend **the** whær hɛɛ iz ekspectiŋ ðhe, ðhe adʒustment ov recogniʃhon and comprehenʃhon will ʃhœrly bɛɛ ɛɛzy. ɛɛven whær, at ðhe beginniŋ ov a sentens, hɛɛ will bɛɛ confrunted wiþ The, ðhe adʒustment will still bɛɛ ɛɛzy—particuelarly if hɛɛ haz been taut tœ 'substituet'—and ðhat t haz aulsœ T az its aulternativ form. ɛɛven ðhe uther caracterz aut tœ present littl difficulty. if hiz reediŋ or speɛċh vocabuelary iz gœd enuf tœ ekspect ðhe wurd 'flœensy' hɛɛ will ʃhœrly not fiend **fluency** an insueperabl hurdl—for after aul, ðhat form iz a lesser departuer from whot hɛɛ ekspects ðhan iz flœensy tœ yœ. aul ðhe caracterz ov **fluency** ar familiar tœ him, whæraz ðhe caracter œ (in flœensy) woz wun hœlly outsied yœr preɛvius ekspeɛriens, and woz wun whiċh yœ approɛċht wiþ nun ov ðhe preparatory teɛċhiŋ and

drilliŋ whiʧ weɛ mæ suppœs ðe ʧield will reseɛv, if ekspeeriens in ðe feeld prœvs it tœ bɛɛ ɛeven rekwierd. Morœver, if ðis preparatory teeʧiŋ wær tœ bɛɛ ʦonfiend tœ œnly ðe 120 ov ðe ʦommonest wurds whiʧ present diffiʦulty, as muʧ as 95% ov eny passæj ov ʦontinueus iŋgliʃ mæ bɛɛ mæd tœ bɛɛ immeediætly reʦogniesabl.

dominans of meeniŋ

in ʦæs yœ dout ðe dominans ov meeniŋ and ʦontekst aulmœst in defieans ov ðe form, tæk a lœk at ðeɛs:



in bœθ ʦæses ðær is a mæjor mistæk in form. dœ yœ spot it? if yœ dœ not, yœ mæ ʦonsœl yœrself ðat ðe meeniŋ is sœ ʦleer ðat yœ hav fæld tœ nœtis ðat in bœθ ʦæses ðe wurds THE THE hav been printed insted ov THE: yœ hav forseen whot is probabl, and mæd yœr ie sɛɛ œnly whot is probabl—whot yœ wont for a sensibl messæj.

ðe ʦæs has been ʃhœrly establiʃht—ðat œnly adʒustment is needed bie ðe ʧield, and ðat adʒustment in ʦontekst is morœver possibl, and indeed eesy. Morœver, wee ʃhood remiend ourselvs ðat in ekspeʦtiŋ ðe ʧield æjd seven tœ reʦogniez probabilitis, and to adʒust aʦʦordiŋly, wee ar askiŋ verry muʧ less ðan wee wood uðerwies hav askt ov him at a muʧ less matuer æj. at ðe æj ov fiev wee wood uðerwies hav ekspeʦted him sœ tœ adʒust wiðin T.O. wiθ aul its ʦompleksitis, and tœ mæk freekwent transiʃhons between hiely dievers patterns: e.g., the and THE. Morœver, at seven hee will enjoi ðe enormus advantæjes addiʃhonal tœ ðat ov græter matuerity and ekspeeriens, ʦumiŋ from ðe ʦonfidens and satisfaʦʃhon whiʧ will hav aʦʦrœd from past suʦsess.

aGæn In tHiθ SEntens whitʃh Is θET iN suʧ A wæ as tœ proDues wurd patTerns Never befor seeN, wee mæ obθerv hou wUnderfœlly ðe bræn Aʦseptsðeʧhænj, And uesesθ proBabIlity and suBStituʃhon in A suʦʦsesθfœl adʒuθtmenT.

ƒhe follœiŋ sentens, houever—beƈaus it mæks nœ sens, ɛɛven ƒhœ pronounsabl—will probably bɛɛ harder tœ rɛɛd—

NIAGA KCAB EMOC ON EY LLIW

unless, as our erlier egsampl, yœ rɛɛd it from riet tœ left.

and whot about '*βρυθερς ανδ αιστερς*' whiƈh enywun hœ nœs greek ƈaraƈters will without diffiƈulty rɛɛd as ƒhe iŋgliʃh mɛɛniŋ **bruƒhers and sisters?**

œnly ƒhe reserƈh will ʃhœ whesher ƒhe transiʃhon will in faƈt bɛɛ as ɛɛsy as ƒhɛɛs ƈonsideræʃhons indiƈæt. at eny ræt, it wœd appɛɛr from tests with kwiet yuŋ ƈhildren hœ hav œnly rɛɛsently attænd ƒhe beginniŋs ov flœensy in T.O. ƒhat ƒhæ, nœ less ƒhan yœ adults, as ie hœp, hav bɛɛn æbl tœ adʒust ƒhær rɛɛdiŋ ability tœ inƈlœd A.R.

The Penalty of Novelty

I have tried to be objective, but I recognize that in this field appearances may be otherwise.

In the days of Galileo the proposition that the earth should no longer be held to be the centre round which the sun and stars rotate was revolutionary. In this proposition that T.O. might better be taught through A.R. there is that same combination of a novel approach to an apparently closed subject: a novel approach, moreover, which appears to be in conflict with what everyone supposes to be a generally accepted, indeed an axiomatic, truism, and an approach which challenges habitual thinking and so arouses the emotions of those who suppose themselves challenged to defend existing habits and to protect themselves from the disturbances, pain, and even loss, which they believe, however wrongly, to be imminent.

No Cause for Alarm

I believe that, notwithstanding the Galileoesque context, I have succeeded in keeping myself objective. Moreover, my motives are transparent. I seek only the benefit of the young child who has not yet learnt to read. This is no reform of spelling: nothing need be reprinted in this medium, even if the research is as successful as I hope. The only effect will be upon the books and papers designed for children who cannot as yet read fluently. Even then the copyright in the characters has been made free to all; any printer is free to buy matrices at the normal price from the Monotype Corporation, and it is hard to suppose that the expected gain of the many will be offset by a loss to be sustained by even a single person.

Not Spelling Reform

It is not even a 'thin end of a spelling reform wedge'. In so far as the design of A.R. was directed to make as easy as possible the learning of T.O., A.R. is thereby

made less suitable for that other purpose. Moreover, I see no benefit to any literate adult who jettisoned his present habits and conveniences in T.O. and needed to start at the bottom to acquire new ones in A.R. On the contrary, I am well-known to favour Bernard Shaw's proposal for leaving T.O. alone but adding to it as a proposed better alternative a non-romanic alphabet, and I am thus seen to be advancing A.R. for only its very limited purpose. There ought to be therefore no cause to fear A.R.—even if it were to become universally used in the early years of teaching reading.

SOME QUESTIONS

May I now ask you questions? In your seats were placed some question papers, which please complete—anonymously—and hand in. The questions are hypothetical, and are not comparable to the realistic free-behaviour test upon which Mr. Downing will need to work. The questioning may well give him some facts concerning the reaction of even notional parents. The Society will publish the results in the report of this meeting. They will become public knowledge, so please ensure that for each of the 150 of you here present there will be a completed question paper with a tick to only one answer—so that the total of answers and of persons present may agree.

We have present with us here, the Research Officer (Mr. Downing) and the following members of the Committee responsible for the research: Mr. Lionel Elvin, Dr. Joyce Morris, and Professor Fry.

May I, on your behalf, ask them to help me in answering the questions which I hope you will be asking? and may I ask Professor Elvin, as Chairman of the Committee, to allot the questions?

HOW WOULD YOU DECIDE?

Please tick the one question (and only one) which most nearly accords with your views—on the supposition that you are the parent or guardian of a child of five years of age to whom you are devoted.

Please read *all* six questions before you tick any.

1. I do not wish my child to collaborate in this experiment—not even in a control class. I wish to hear no more about the matter. (2)
2. I would not wish my child to take part in this experiment, but I should like to be kept informed of any progress, and of the final result. (8)
3. I do not at present wish my child to take part in the experiment, but I wish to keep in touch, and, if I think fit, I might offer my collaboration later. (5)
4. I have as yet formed no judgment either way, but I am interested, and should like to hear more about it before making a final decision. (33)

5. I am favourably inclined towards allowing my child to collaborate in the experiment —provided that I am at liberty to withdraw him if I think fit. Please include my child in the panel from which the classes are to be drawn. (36)

6. I am sufficiently convinced that this research is sound and will be a success—please include my child in the panel from which the classes will be drawn. I may add that I shall be very disappointed if my child is not in one of the research classes. (12)

The numbers in brackets at the end of each question show how 96 *of the audience responded. It will be seen that of these* 16% *were grouped in the negative responses* (1–3) *and* 84% *in the more co-operative last three questions.*

DISCUSSION

THE CHAIRMAN: We have been taken with great thoroughness a very long way, and I do not propose to offer any interim remarks at this moment, but simply to say that the speaker will be very glad to answer questions or hear comments that anybody here wishes to offer. Would those who propose to speak be so kind as first of all to give their names.

MR. P. K. SHAHANI: The diagraphic letters are usually horizontal, but the ones suggested in the Augmented Roman are vertical. Would it not be more difficult for the child to read the vertical ones?

THE LECTURER: I would not accept that there is that difference. The diagraph of 'th' (ʇh or ʇh) is still arranged in a horizontal direction; admittedly they are closed up a bit to give the concept of a character standing on its own, but they are not arranged in a vertical order except in the one case of 'ing' (ŋ), which is a very peculiar case. Unless people want me to dilate on this I had better refer you to a little booklet which will be available in the Hall. It is in that booklet on the Augmented Roman alphabet and you will there see the reasons underlying putting the 'g' of ŋ below. Shortly, it is that in the word kiŋ your eye travels down to the 'g' but in the word baŋk the eye does not travel down but goes straight on to the k.

CAPTAIN F. W. TAYLOR (Former Education Officer, Northern Nigeria): Fifty years ago I sat at the feet of Walter Ripman when he gave a lecture on simplified spelling. I disagreed with him fundamentally then and I disagree fundamentally to-day with all that is being done to revise our orthography. I knew nothing about the subject at that time: then I went to Nigeria as an Education Officer and the war broke out, and it was not until I came home in 1918 that I was able to sit at the feet of Professor Joseph Wright at Oxford—the editor of the dictionary. The next time I was on leave, I sat at the feet of Daniel Jones, of University College, and by that time I claim I had a good knowledge of phonetics and of philology generally. I wrote many grammars and readers for African languages based on phonetic principles. Fortunately I was able to make what is to all practical purposes a phonetic spelling of Hausa and Fulani. Then my researches led me to write a book, *Introduction of Spoken English*, and in it I proposed not a new alphabet but new names. Instead of a, b, c, d, I started with consonants and gave them new names: b was 'bi-ib,' so that if you had a word like 'bib' it was very easy to spell it. What is easier than that for a child? As for vowels, I gave them the recognized Italian values on the phonetic principle.

I disagree entirely with your list of 43 symbols. There are not 43 sounds in the English language; there are 13 vowels, 4 diphthongs, and 23 consonants, not counting the Scottish sounds. Why go and overwhelm the poor child with 43 strange symbols? I disagree entirely with your spelling of **judʒ** for 'judge'. The sound at the beginning and the sound at the end are identical, and the idea that they are different, I am sure, was only introduced by Walter Ripman because he was German and that sound does not exist in German, so he said it should be pronounced that way. It is not 'ju-d-zhe', it is 'juj' simply.

I shall therefore do all I can to thwart the efforts of this organization.

THE CHAIRMAN: I will offer Mr. Pitman an opportunity of answering the charge so far made.

THE LECTURER: First of all, I think there is a misunderstanding about this. There is no intention at all of mucking about with our orthography. The whole purpose is to bring the child to the existing Traditional Orthography. Perhaps I have not emphasized that enough, and I should emphasize too, to all of you, that this would be solely for children between the ages of, shall we say, five and seven, and at that stage they will go on to T.O. So that you, Mr. Taylor, may read your *Times* in the same form hundreds of years hence. This is no attempt to muck about with existing English.

The second point is also, I think, a misunderstanding. I am talking about research to find things out, and if that research finds out that this is very beneficial to our young children and enables them to learn to read T.O., then that will have added to the total of knowledge. What you, Sir, or anybody else in the world, does with that knowledge, is entirely up to you. I am not going to bully anybody at all. I have had this bee in my bonnet long enough and I should like to see it fly out to find the profitable honey which I believe to be there or to be killed.

MISS M. CHISNALL: It seems to me that what you gain on the roundabouts you lose on the swings. I think so much reading now is incidental. A child gets it from outside, not just sitting down to learn a lesson. It goes out with its mother and sees thousands of things on 'buses, posters, everywhere; we encourage them to read these and that is how they learn to read. When the child sees one spelling outside and then sees different shapes in a reading book, I think it will become confused. After all, in the two short years you mentioned a child has to cope with mumps, whooping cough, and all sorts of other things.

I am a headmistress and my children are reading really quite freely in the time you mentioned. They make up stories and put them down, and I think all that would be lost to them if they had to wait until they were seven to get to T.O. But I think this should be tested for the slower child; that is certainly worth doing.

THE CHAIRMAN: Before we take the next speaker, I should like to ask Dr. Elvin to reply on this point.

DR. H. L. ELVIN: Might I make two remarks, one concerning the previous intervention? Our interest in this at the University of London Institute of Education is not one of agreement or disagreement with any doctrine or proposal. The only relevant question to us is whether we agree it would be worth investigation. We are not committed to any answer; it would not be honest investigation if we were; but we have felt that there has been so much, frequently passionate, argument on one side or other of the question that, even though it might upset some of the contestants, it would please public and parents to have a little evidence—and that is the limit of our interest in it.

I agree there are many difficulties about this. It is perfectly true that children who learn to read through A.R. will be seeing things written in the other alphabet, but I would not go all the way with the last questioner in suggesting that a child really

learns to read out of school. She did not mean that, I am sure, but it did sound like that. We still do have to teach reading in school, and we shall have to find out how far it helps to read through an alphabet that is certainly somewhat more regular than our normal one, or whether in fact the external influences are so strong that it makes no difference. But if we get that negative result, we consider it a result.

MISS CHISNALL: I think the investigation is very useful and should be conducted.

MR. A. POWIS BALE: Will Mr. Pitman's system in the main tend to improve good English? The reason I ask about this—would it promote good English—is that we are slipping up quite a lot. The B.B.C. in its early days did immensely good work towards promoting good English, but lately I am afraid I find them slipping quite a lot.

MR. C. W. PAUL-JONES: One of my reasons for putting a question at all is that I was once a child. I learnt to read, with great difficulty, from *Reading Without Tears*, and it was sodden by the time I had finished with it. I also learnt to write in a copy book by Vere Foster and I remember very clearly my bewilderment at being asked to write such extraordinarily different shapes from those I was expected to read. I suppose this does not really lead to a question at all—only to an expression of interest in what I have been listening to this afternoon and an expression of willingness to support any research into the facts.

MR. FORD: Is it intended that the children should learn to write the new characters, or is writing to be postponed until they have got back to normal—until they have resumed the traditional orthographic principles, I should perhaps say?

MR. J. A. DOWNING: I think you asked if it was intended that children should learn to write. In one of Mr. Pitman's slides he did show the script it is proposed to use for children writing in the new alphabet. In fact, one of the alleged advantages of the new alphabet is that it will allow children to express themselves in writing without any feeling that they have difficulty in spelling, because they will be able to spell as they hear the words.

MR. W. J. REED (Headmaster, Broadstairs Junior Boys' School): Nobody who has glanced at the pamphlet put out by the London University Institute of Education will have any doubt about where the experts stand, but those present may be interested to know that the teachers in the schools are lining up more and more in favour of this research. On Saturday, the Kent County Association of Teachers Education Committee will include in its report the following resolution: 'That the Kent County Association lend its support to the proposed research into the teaching of reading to be carried out by the University of London Institute of Education in association with the National Foundation for Educational Research'. That was carried at a meeting of more than 50 teachers, with only one dissentient vote. I thought you might be interested to know where the rank and file of teachers, who are very important in all these questions, are tending more and more to stand.

BRIGADIER J. L. P. MACNAIR: Some time ago, and in fact until quite recently, I was almost as strongly opposed to changes in orthography as our Education Officer who spoke earlier on; but I think the great point has already been made, that this is not directed at a change in orthography but at helping children to use the present orthography of the English language. From that point of view, I am quite sure the experiment could be a good one and should be attempted. However, I have at the back of my mind a question, which I do not expect you to answer because it is not really answerable, and that is—are you not trying to overdo it? There are a largeish number of new figurations that the child will have to learn before he gets on to ordinary orthography. I do not know how many of you read easily that first page that was

put up on the screen, but I must admit I was puzzled for quite a long time—I am probably rather dense—by the word flœensy. That is what it looked like and what the intelligent child would normally read. I think you have rather overdone it, for example, in using two forms of omega. That is only one example; another is the use of both ȝhee and iȝh. I think you may be asking the child to learn too much. It should be possible to simplify the job, and if you did this I think it would have more chance of success. If you are going to have an experiment it is important to give it every chance of success.

THE LECTURER: That is a very good question, because it is the intention of the research to raise at the end of the period the question of whether the alphabet itself should be looked at in the way you have suggested and if there is a case for doing so to alter it. Just taking the character *oot*, we must be able to write the difference between 'good food': it may be that as said in Glasgow it is gωd fωd and gœd fœd as said somewhere else—in other words, there is a difference in gωd and fœd, and I think omega and the extended omega provide a very happy solution. As you know, when you say *water* or *went* you are almost saying a vowel at the beginning, so that you have three lengths. The most contracted is the consonant w, the next longest is ω as in *good* and the longest is œ as in *food*.

If, as you go out, you will take a copy of the article which appeared in *Teachers' World*, you will find that I deal there at considerable length also with the question of the other augmentation characters and in particular with the supposed need to discriminate between *not her* and *mother*, and on the confusion which I feel the child must get from this, thinking that if it is *not her* it should be *mot-her*. I think this idea must be difficult for the child. Take the words *electric heater* and *electric cheater*, if you like. We are just questioning whether this is a difficulty for the young child. We may find out in this research, but we are determined, if the research is successful, to have a good look at the alphabet and find out whether it has been too greatly simplified. I think we are right in this investigation to err if at all on the side of simplification.

MR. D. H. TRIBE: My qualification is that as a writer I find many typists do not know how to spell, so I think experimentation is certainly called for in this field. I should like to ask a question about this questionnaire, which I assume is the main purpose of this meeting. I want to know if there is an intermediate category between questions 5 and 6, because 5 provides an escape clause which would invalidate any research. When a child learns to read he has some moments of difficulty, naturally, and if children are associated with an individual method they will ask their mothers to remove them from the experiment. Question 6, on the other hand, seems to imply complete acceptance even before the research is conducted.

DR. D. DIRINGER (Alphabet Museum): If Mr. Pitman's initiative is successful, is there an intention to take it abroad also? We should not forget that English is practically the universal language and one of the greatest difficulties experienced by foreigners learning English is that the pronunciation is so difficult and particularly so erratic. In my life-long experience I have dealt with hundreds of alphabets and I know that the addition of A.R. would not be a great trouble for the child. But I should like to ask you not to forget the point I have emphasized—that English is the universal language—and it would be very useful from several points of view if this alphabet were sent abroad and adopted also by UNESCO and other international bodies.

THE LECTURER: May I deal with that, and then ask Mr. Downing to deal with the first question?

I do not think it is for us English to impress on people abroad that English is the

world's second language; I would far rather that came from them, and I can tell you that I have had letters on these lines from nineteen different countries. Many of the people writing are very much interested in this because they are teaching English to their students abroad, and this is particularly true in the countries that do not normally use the Roman alphabet—most of Asia and Africa, that is. For their writing they have an alphabet which is not romanic, so for them it is very difficult to learn three 'a' forms and three 'b' forms. So apart from your point, there is the further point that for them an alphabet with 43 characters is simpler than the 70-odd characters in their T.O.

MR. DOWNING: Answering the question about the form you have been asked to fill up, I think the misunderstanding about No. 6 is due to the fact that the word 'success' may be related either to the alphabet or to the experiment. In fact, the University is not committed to the alphabet one way or the other; we are in this just to find out whether or not the alphabet is successful in helping children to learn to read. I think all we want to know here is whether or not people are going to let children take part in the experiment in this spirit—we simply want them to say whether they think the *experiment* will be a success, rather than the alphabet.

THE CHAIRMAN: I think it is time we drew this meeting to a close. Perhaps I may be allowed to make two observations. The first, arising out of one of the remarks that was made, is that I happen to be here in my private capacity. As Chairman of the B.B.C. I gave myself the afternoon off, for I thought it would be enjoyable to spend this afternoon in this way—and, speaking for myself, it has been, partly indeed because of the extremely interesting character of some of the questions and statements. In that respect I feel myself indebted to this audience. But also—and here I think I am speaking for everybody present and for many who had to be absent—we are enormously grateful to Mr. Pitman for the way in which he has composed this amazing experiment and for the way in which he has taken this class through it. It is obviously a very high I.Q. class, but he did display great art in keeping it going. I am sure you will join with me in offering him a really hearty vote of thanks.

The vote of thanks to the lecturer was carried with acclamation and, another having been accorded to the Chairman, the meeting then ended.

SOME TRAFFIC PROBLEMS OF LONDON

A paper by

A. SAMUELS, C.B.E., A.M.I.Mech.E., M.Inst.T.,

Chairman, London and Home Counties Traffic Advisory Committee, *read to the Society on Wednesday, 30th November, 1960, with Sir Richard Nugent, Bt., M.P., in the Chair*

THE CHAIRMAN: It is a privilege to take the Chair tonight for my old friend Mr. Alex Samuels. I had the privilege of seeing a good deal of him when I was in the Ministry of Transport and we had the benefit of his expert and untiring work for us, all done on a voluntary basis—public work for the good of the community. I learnt to respect and value his views very highly. So I know we are going to hear something very interesting from him tonight, and when you have heard his paper you will have a chance to put any points of view which you wish to put to him.

The following paper was then read.

THE PAPER

INTRODUCTION

All my working life I have been mixed up with London's traffic, in my earlier days as a taxi-cab driver and operator. That experience brought me face to face with the very practical problems of traffic, and they have ever since had a fascination for me. It was, therefore, a source of great pleasure to me when nearly 15 years ago I was appointed a Local Authority representative on the London and Home Counties Traffic Advisory Committee, of which I subsequently became Chairman.

My long association with that Committee has enabled me to see the 'other side', so to speak, of traffic problems, and I have come into contact with many of the real experts in traffic from the Ministry of Transport, the Police, the Road Research Laboratory, the Local Authorities, London Transport, and others. I am most grateful to these bodies and my friends in them for certain facts and figures included in this paper; but the conclusions I draw from them and the views I express on the problems of transport in London are purely personal ones.

I should like first to comment about the administrative responsibilities for these traffic problems. Then I will turn to those which have most concerned me over the past decade and will discuss the ways in which they have been and are being solved and the administrative difficulties involved. I shall then try to give a wider picture of the sort of problem we are faced with in London for the future and the lines on which I believe it should be tackled.

ADMINISTRATIVE RESPONSIBILITIES

The basic transport question in London should be the question how best people and goods can be moved from the place where they are, to their destination.

But the responsibilities for transport and traffic in London are so confused that it has been almost impossible for any of the administrative bodies responsible to face the issue in these terms. It could only be faced realistically if the major responsibilities lay with one body. In fact, however, a great many authorities are concerned. I do not propose to go into great detail, as the facts are already fairly well known, and have been set out in detail in the Report of the Royal Commission on Local Government in London, published in October.

Broadly speaking, the Minister has power to make regulations for the control of traffic on roads in London, but before making these regulations he has to consult the Home Secretary, and until this year he was obliged to consult the London and Home Counties Traffic Advisory Committee as well.

Within the whole of the London area, enforcement is the responsibility of the Metropolitan and City Police. The police, through their membership of the Traffic Advisory Committee, are usually consulted directly about regulations, and as I have already said, the Minister is bound to consult the Home Secretary. The Minister has, however, no direct control over enforcement at all. The police have also, since 1956, had a direct power to carry out traffic regulation experiments, subject only to the Minister's consent.

The London and Home Counties Traffic Advisory Committee is a very large body, with forty-five members, which was originally set up to advise the Minister of Transport over a much wider field than the traffic problems with which it has been concerned since the war. This body contains representatives from the local authorities, the police, the trade unions, road users, the Ministry of Transport, and the Home Office. It seems that in 1924 it was hoped that the existence of this body would go some way to ensuring unified control of transport in London. In fact, it has not succeeded in achieving that particular objective. Even although the Minister consults the Committee he has still found it necessary to consult practically everybody else as well.

All public transport in London is provided by the British Transport Commission through two of its constituent undertakings—the London Transport Executive and British Railways. The Executive and the Commission are both represented on the Traffic Advisory Committee as road users. It seems possible that the Traffic Advisory Committee under their statutory terms of reference could make recommendations over the field of public transport operated by the Executive. In fact, however, they have not done so recently. Recommendations as regards this field of public transport come from the Transport Users Consultative Committee for London, but there is no effective liaison between the two bodies.

As I said earlier, I personally entered this scene as a member of the Traffic Advisory Committee. I was appointed Chairman by the members in July, 1947, and I have remained as Chairman to date. Since 1949 I have been directly concerned with various attempts by or on behalf of the Minister to effect positive policies of traffic control and have therefore grown expert in the methods of making such changes, despite the conflicting responsibilities which I have described. They have also shown me, as I said earlier, that it is almost impossible to do anything quickly in the present situation. The Road Traffic and Roads Improvement

Act has helped to cut out some of the worst knots, but could not tackle the problem caused by the number of authorities with responsibilities in this field.

In 1958 the Minister appointed a special non-statutory body, known as the London Travel Committee, also under my chairmanship, to deal in effect with the major problems of public transport in London. This of necessity worked over some of the same field as the Traffic Advisory Committee and had for a time a special sub-committee dealing with traffic. The importance of the activities of this sub-committee have diminished since the Minister's appointment earlier this year of the London Traffic Management Unit, under Dr. Charlesworth, which has taken over the job of initiating schemes of traffic improvement.

My experience with these two bodies has led me to conclude that, because of the separate and watertight responsibilities of all the authorities the problems have been examined in isolation. But they are really different facets of a single problem, which should be considered as the problem of moving people and goods as economically and rapidly as possible, taking as much account as possible of their individual transport preferences, but with a firm eye on the comfort and convenience of the majority. At present there is no person, no body and no committee which can take that broad view.

The Royal Commission have now recommended a reorganization of local government structures which would provide for a single authority to have the responsibility over the whole field of traffic and roads, but not public transport. I will only say that I am convinced of the need for a single authority to have such a responsibility. I hope that those whose duty it is to consider this Report will bear in mind that our whole social way of life depends on solving London's transport problem and that there is no point in having an otherwise acceptable form of local government for London if it cannot adequately face and tackle that problem. If congestion is not controlled, then London as we know it is doomed.

I think that a reconstruction of organization and responsibility is vital to the success of any plans for dealing with London's transport problems. But I do not want to give the impression that once the organization is there the solution is easy. There is no one solution. It is, to my mind, a question of pushing forward as vigorously as possible on a number of fronts. Some of the ideas which I am putting forward have some statistical evidence to show that they would work. Others are really no more than hunches which I put forward for discussion, in the hope that my ideas may stimulate others to think about these difficulties.

TRAFFIC CONTROL AND PARKING

The main statutory function of the Traffic Advisory Committee since the war has been to advise the Minister of Transport on proposals for traffic regulations. My own chief interest, therefore, and that of the Committee also, has until recently been centred on the problems of how through discipline and control to make the best use of London's existing street system. We have been much less concerned with physical improvements. In fact, until quite recently, this problem of achieving discipline on the streets has been the most important one for all those concerned

with London travel. The problem itself is not by any means a new one. The outlines of it and its solution were clearly comprehended and set out by the Committee in its Report on London Traffic Congestion, issued in 1951. Since then, the supply of vehicles for the home market has increased steadily and continues to increase. The motor car is rapidly becoming a standard household possession in this country.

Here are some of the facts:

(i) By 1953 vehicular traffic was back to the highest density reached before the war and since then it has been increasing at an average rate of 4 per cent per year. The average flow of vehicles in main roads in Central London increased from 1,230 vehicles per hour in 1947 to 1,585 vehicles per hour in 1958, of which 42 per cent were private vehicles and 37 per cent commercial. Average journey speeds over the same period fell from 11·8 m.p.h. to 10·1 m.p.h. Fifty-three per cent of journeys through controlled intersections involved a stop, and the stop time, as a percentage of the total journey time, represented 36 per cent.

(ii) The Road Research Laboratory, who produced these figures, say that traffic on main roads increased by 7 per cent between 1956 and 1958, and that private vehicles increased during this period by 17 per cent.

(iii) There are 1,200 intersections between classified roads in the County of London with 120 in the Inner Area. The total route covered by this survey was approximately 40 miles, and the Road Research Laboratory say that there were 44 intersections at which the average stop time was greater than 30 seconds.

(iv) The number of vehicles registered in the area of the County of London during the period 1954 to 1959 rose from 400,153 to 595,542, an increase of 49 per cent. Registration of private cars, however, rose by 70 per cent from 201,757 to 341,995. That is approximately ·11 cars per person and ·32 cars per family.

In quoting these figures it is as well to remember that the total number of vehicles on the roads of Great Britain is expected to double within the next ten years.

The inevitable result of all this is an extremely high demand for the use of London's existing road space. These roads were invaded by an army of automobiles either jostling with each other to get about the streets or crowding along the kerbside to find a place of rest. The number of vehicles is still increasing, and we cannot yet begin to estimate its maximum extent. Some experts have advocated the large-scale construction of new roads in London to keep pace with the advancing vehicle numbers, but in present circumstances this would simply attract more and more vehicles. Unless we can first restore order and discipline in the use of the road system as a whole, then in my view a policy of unlimited urban road development would be as useless as building castles in the sand. Admittedly we need more roads, but we need first a disciplined use of those that we have.

The law recognizes that a highway exists for two main purposes; to allow the passage of moving vehicles and to permit access to premises fronting it. But it was never intended for use as a public garage. Yet this is precisely what in practice the highway was being used for. In Central London there are 210 miles

of street on which, until recently, some 50,000 vehicles were parked every day, 60 per cent of them for long periods.

These 30,000 long-term parkers used up about 100 miles of kerbside space without cost to the parker, despite the immense disadvantages it caused to legitimate users of the highway. If the long-term parkers had been charged for the privilege of abusing the highway, their subscriptions could have gone some way towards covering the cost of off-street garage space for every one of them, and their removal would have released the equivalent of 25 miles of new road.

In the light of this growing problem it was recommended by the Traffic Advisory Committee, and subsequently decided by the Government, that the essential first element in the relief of traffic congestion in Central London was to restore the streets as nearly as possible to their proper use by a strict control over street parking. Parking on the streets should be authorized only in those places where it would have no serious ill-effect on moving traffic or on access to premises. Where parking could be allowed, first priority should be given to the short-term user, firstly because we thought that he had the greater need to be near his place of call and secondly because, with short-time limits, more people could make use of each space during the day. It was thought that essential long-term parking needs should be met by parking places off the street, and that the ratio between supply and demand both on and off the street should be maintained by the levying of charges.

To anyone who has studied the problem objectively, the clearing-up process seemed obviously to be the essential first stage in any effective cure. We were sure, that, having tidied up the streets, we could more readily turn our attention to ways and means of regulating their use so as to give the best and smoothest system of traffic flow for moving vehicles; but unless we tidied up successfully beforehand there would no longer be any vehicles on the move.

Until 1956 there were no statutory powers to introduce parking meters or any other form of charging for parking on the streets, and until this year no powers existed to allow the use of Traffic Wardens or the so-called ticket system. The struggle over the past years has therefore been not so much devoted to the finding of a solution of the problem of clearing the streets as to persuading all the various bodies concerned, including Parliament, that the only practical cure was in fact a necessary and desirable thing.

At last you can see the whole system being put into practice in the parking-meter-controlled areas of Central London enforced by a corps of Traffic Wardens able to bring offenders rapidly to book through the ticket system.

There is nothing particularly astonishing in these new developments or in their effectiveness. This was all foreseen and advocated nearly ten years ago. It is really much more difficult to explain why it has all taken so long to come about. The answer is to be found in the complexity of our administrative system, to which I have already referred.

It may be interesting if I digress slightly and give the latest figures. The first parking meters were introduced by Westminster in 1958, and by the time that I give this Paper they will have a total of about 2,700 meters in Mayfair and the

St. James's area. A further scheme, to cover the Victoria area, is now before the Council, and might well come into effect next year. St. Marylebone started rather later, and at the date of this Paper will have about 1,250 meters. The scheme in Holborn, for about 680 meters, started on 3rd October, 1960. Taken together, the various schemes for parking meters in the City, St. Pancras, Shoreditch, Paddington and Finsbury, if they are eventually approved, will provide for about 3,000 meters in all, and I hope that these schemes will mainly be brought into effect before the end of next year. There are also schemes for Woolwich and Croydon. At the same time, the Selfridge car park, for about 1,000 cars, was opened at Christmas, 1958, the Westminster City Council are building a car park for about 400 cars in Audley Square, there are car parks either in course of erection or planned for a total of 7,000 cars in the City and I know of at least ten further schemes in Inner Central London. When all these are completed we shall have a total of about 25,000 car spaces in public parks and garages in Central London. In this connection, I was very glad to hear that the Government are giving a lead by promoting legislation this session to enable an underground garage to be provided in Hyde Park, near Speakers' Corner. Garage sites in Mayfair have been very difficult to find. This new project, if it leads to another thousand off-street parking spaces in that area, cannot fail to be of great help.

The average traffic speed in the first of the controlled parking zones increased by 9 per cent, and there was also some reduction in the accident rate. In the zones immediately outside parking-controlled zones the average speed of traffic flow declined. As was to be expected, the cars which were turned away from one zone tried to see whether there was room to park in adjoining ones. I am sure local authorities will take this factor into account, and I hope that they will press on with the introduction of parking meter schemes which are so clearly, at least in my eyes, the means of controlling parking adequately and fairly in the circumstances of present congestion.

The control of waiting by commercial vehicles has been an essential part of these first parking-meter schemes. They all provide that adequate space should be left for commercial vehicles to wait for short periods in places where they will not cause obstruction, and equally they restrict such waiting in places, particularly at intersections, where waiting by any vehicles will cause obstruction. There have also been some experiments outside the Central Area with restrictions on waiting by commercial vehicles during the peak hours on the main arteries. I think we must recognize, however, that all-purpose roads serve to provide access to premises, as well as to provide for through traffic. The position is complicated by the hours of the markets in London and the need for shops to have fresh produce every day. I think this is the type of problem where each proposal has to be looked at on its merits, in the light of the effect that the proposal may have on the freedom of traffic, and also on the needs of the individual premises that are likely to be affected. I thought, however, that it would be of interest to mention this problem and to give two examples of such experiments. In one, all waiting has been prohibited during the morning and evening peak hours on both sides of the Finchley Road for a length of about 100 yards immediately opposite the Finchley Road Tube Station. This may

have caused some inconvenience to a few firms, but has proved very successful. The worst problem was in the morning, and these restrictions have increased the flow of traffic southwards through the traffic lights by more than one-third. On rather a different scale, waiting restrictions, including restrictions on loading and unloading, were imposed on a long length of Putney High Street earlier this year. The results are still being assessed. The restrictions had to be imposed over a fairly long distance in order to try and deal with a particularly difficult centre of congestion, and it will be very interesting to see how far they have succeeded.

As the central road system is cleared of its dead weight of parked cars, so it becomes increasingly possible for the traffic engineer to apply his techniques to improve the flow, and a number of interesting schemes are now in operation. I personally think that much more can be done through the introduction of one-way systems, and by adequate linkage and control of traffic lights. We have carried out one very successful 'Tidal Flow' experiment, at Chelsea Bridge, to increase the flow of traffic at peak hours by giving the main flow more than half the road. I am sure we can find other places where this system would work equally well. I know that the London Traffic Management Unit are well aware of these possibilities, and that much is being done to study their possible scope in London.

ROAD IMPROVEMENTS

It is one of the premises on which this Paper is based that complete and radical reconstruction of London is not practical. It might be possible to argue that the means of transport for the future is the private car, that restrictions cannot succeed in the long run, and that London must therefore be rebuilt to cater for the car. Apart from the enormous cost, and the length of time the work would take, there are social arguments against such a radical solution. London is not just one but a collection of communities, each with their own life. To disrupt these would clearly be unsatisfactory. Furthermore the reconstruction would be on such a scale that if the task were undertaken, and roads fit for cars were built, it would still not be possible to say that the reconstruction of London as a whole had achieved its objective of saving London as we now know it.

But it is not my view that a large number of physical improvements are not desirable. The London Roads Committee under the chairmanship of Sir Richard Nugent recommended a programme of major schemes over the next ten years, based on the amount of revenue likely to be available. They concentrated on the improvement of the existing main arteries and the removal of bottlenecks. They produced plans designed to increase the traffic capacity of the main routes affected by about 50 per cent. This was planned to take 20 years. In my view, this is not sufficient. I think the evidence of the last few years, and the forecasts of the Road Research Laboratory, show that much more than this will be needed. In my view, the only sensible way to plan, as all American cities do, is on the basis of a comprehensive and up-to-date traffic census. The Minister has said that he is going to arrange for such a census, and it will be very interesting to see what it brings forth.

I suspect that it will show the need for much more comprehensive road planning than the Nugent Committee thought necessary, and I still think that we ought to

have another look at the original 'A' Ring Road project which was dropped in about 1950. We must not sacrifice London to the motor car. But, in my view, we shall only cope in the future if we have a limited number of main roads reaching close to the centre (perhaps about a dozen in all) each of them up to motorway standard and with limited access, and connected to each other by a small radius Ring Road. Traffic desiring to go through London would use these roads, and would never have to use the ordinary all-purpose roads at all. Traffic wishing to stop in Central London would be able to come close to the centre by these motor roads, and would only have to do the last mile or two by an ordinary all-purpose road.

Quite apart from the question of cost (and the Minister of Transport has recently said that there will be very much more money available for roads in urban areas), major improvements in a city like London take time, if only because of the problems of land acquisition and the legal procedure which must be followed. In the meantime I am attracted by the idea that in selected places, where there is enough room, we could build fly-overs quickly and cheaply, using the Bailey Bridge type of construction. I am sure that if they were given the opportunity, there are engineers who could design this sort of inexpensive but effective fly-over without needing to wait for the acquisition of land on the scale required for fly-overs of more orthodox pattern.

LIMITED RÔLE OF PRIVATE CAR

There is now a common tendency to think of London's traffic problem as largely confined to the roads. This is understandable in the light of the dramatic rise in the numbers of road vehicles. In this context it would be easy enough to assume that London's traffic situation is already similar to that in many large cities in the United States, where the 'bus and train have long given precedence to the private car as the chief form of passenger transport, and to conclude that the problem should be tackled by a massive urban road and car park building programme.

In fact, however, in London with its comprehensive public transport system, the case is different. Of more than a million people who travel into Central London to work every day, 90 per cent still use public transport and, of these, three-quarters travel by rail and tube. Inevitably, therefore, if London's road traffic problems are to be tackled on the right lines, they must be considered in their proper relationship to the overall London traffic pattern, taking into account the various forms of transport available and the part which each must play. The large scale carriage of people by private car into city centres makes extravagant demands upon space by comparison with their carriage by train and 'bus, particularly since it so frequently happens that a large car is used to carry only one person. In some cities where traffic planning has been based on the private car as the principal means of passenger transport, vast areas of valuable space in the city centre which might otherwise have been used gainfully are now occupied by roads and car parks. There is a grave danger that this erosion by roads and car parks will lessen the value and importance of the city centre and encourage a type of decentralized sprawling

urban development which, in this small country, could quickly absorb what countryside is left.

Against this background, it seems clear that some control over the number of vehicles trying to enter London is necessary. Without control of some kind there would be an inevitable drift away from public transport and we should be faced with a London where traffic is immobile, or where re-planning has covered half the south of England with houses.

I am against any licensing or permit system. It has been suggested that the traffic authority, whoever they are, should be entitled to say that no private car should come into the Inner Area. I do not think that this is practicable. I think that it would be necessary to have so many exceptions from any general rule that it would not be possible to enforce it. But in any case it seems to me the negation of a policy, because we should aim to keep London free for those who desire to go there, and I do not think we should compulsorily limit anyone's choice of transport.

That leaves us with financial control. I think the best method of financial control is through control of parking, because that leaves it to the individual's choice whether or not he should make a particular journey on a particular day. He need not decide in advance, there is no question of buying a ticket, he merely pays when he arrives. That means that we must not provide more parking facilities, whether by way or parking meters on the street, or by way of off-street garages, than is necessary for the number of cars that the street network can accommodate on their way in and on their way out. For the remainder of the travellers (and I return to this in a few minutes) we have got to make public transport sufficiently attractive. We must provide sufficient garages for those people whose essential duties necessitate their parking in London, and who may have to park for longer periods than could be catered for on the streets.

RÔLE OF PUBLIC TRANSPORT

I have already emphasized the importance of public transport. According to a census taken in July this year, a total of 1,270,000 people came into Central London between 7 and 10 a.m. daily. Of this total, 1,149,000 came in by public transport (927,000 by rail and tube) and 121,000 only by private transport. Since 1957 this represents a total increase of 40,000, or 3 per cent. Rail traffic has increased during this period, public road transport has decreased and private transport has increased. But despite a large increase in the number of private vehicles bringing people to work, the numbers travelling by road on public and private transport together has already dropped by 1 per cent. Of all the people arriving in Central London nearly 600,000 arrive by public transport between 8.15 a.m. and 9.15 a.m., and 620,000 leave between 5 p.m. and 6 p.m.

The private sector of transport is growing, but at the present just under 90 per cent of commuters still come into London by public transport. It is clear from the figures that there is no hope of dealing with congestion in London if a markedly greater proportion of commuters decide to use private transport. One of the vital questions is, therefore, whether public transport can be made sufficiently attractive to continue to cater for the existing proportion of commuters and possibly to attract

some of those who at present prefer private transport. The temptation for people to switch over to private transport is great. With the rising standard of living, more people buy cars, and the mere ownership of a car is itself a temptation to use it. But the greater the congestion on streets the less regular and attractive public road transport must become, and the greater the attraction for travellers to desert the 'buses. There are all the indications that we have entered a vicious circle which, if it is not broken quickly, can only lead to the disintegration of our public transport system. If that happens, and many more commuters use cars, it will strangle the whole life of London.

Some means of control is necessary. As I have already suggested, it seems to me that the right method is a financial one. The difficulty up to now has been that the car owner does not bear his full share of the cost. That may sound a provocative statement with taxation as high as at present. But a commuter with a car, when he considers whether or not to use the car for his daily journey, does not take all the cost into account. He probably ignores depreciation, and he may only consider whether the cost of the petrol and oil for the journey is much greater than the cost of the public transport ticket. In many cases it will be less. But if we make him pay the full cost of his parking facilities in the centre then the cost of the private journey may well be very much greater. If, therefore, we are to make public transport more attractive than private transport, it is essential that parking facilities in the centre should not be subsidized.

In the present parking meter scheme, cars are charged for parking and are only allowed to park for limited periods on the street. Scooters and motor cycles are allowed to park for unlimited periods free of charge in certain sections of streets. The census I have just mentioned showed that the number of motor cycles and scooters entering Central London more than doubled between 1957 and 1960, reaching a figure of about 20,000. I am not sure whether this increase is desirable on safety or traffic grounds, and it is clearly something which the authorities should look at speedily.

But to return to the main argument, what are we to do about public transport? First we must look at the pattern of the public transport system. The main-line railways project outwards from the central hub of Inner London, which is surrounded by main-line stations. Inside the hub connections are provided in part by the tube lines, but there is a bad gap from Victoria north-eastwards which the proposed Victoria line is designed to fill. To some extent these inner connections are supplemented by 'bus services.

The tube lines also supplement the main line radials outwards from the hub. The main-line radials, with this help from the tubes, already cover most areas adequately, and the worst gap would be filled by building the Victoria line. But compared with the pattern of the main-line radials the inner connections give an impression of haphazard planning.

Obviously this system can carry large numbers from homes near the main radials to destinations near the hub main-line stations. It can also carry smaller numbers in some direction only through and across the hub. It is, generally, not suited to carry people from one suburban area to another going across the line

of the radials. It is ideally placed to take large numbers from suburban dormitory areas near main lines to offices near the main stations. It does much less well when a long journey in the hub is involved. That is why travel to offices in the City is on average so much easier than to offices in Mayfair. I will discuss the planning aspect of this a little further in a minute. But the immediate point is that at least we should ensure that the radial pattern is completed, and build the Victoria Line.

I want to make one minor point here. The main line trains and tubes are already filled to capacity at peak hours, with as many standing passengers as can be physically crammed in. At most other times, there are spare seats. Could we not, as an interim measure, increase the standing capacity, by removing seats from some of the coaches, for the shorter journeys at peak hours?

A better way to try to tackle this aspect is to reduce the peak-hour load. It is uneconomical for the authorities to provide additional transport facilities merely to cater for this peak-hour load, but at the same time present conditions are intolerable. The London Travel Committee have been trying for some time to increase staggering. Since the beginning of 1957 it has been possible to persuade 274 firms, employing in round terms 50,000 staff, to begin and end their working day outside the peak travel period. But this is clearly only an insignificant contribution, and I am sure that we must do much more of this in the future.

Again we come back to the central problem of responsibility. If there were one body with responsibility, they would have to look realistically at the present situation. As I have said, we cannot cater for private car transport, and therefore we say that we must depend on an efficient public transport system. But it is no good saying this, if for any reason the 'buses are not there to carry the people. If there were a major authority for London, with responsibility for roads, traffic and transport, then they would have to look realistically at all aspects of 'bus operation in order to ensure that 'buses were available.

At present, the London Transport Executive as the executive body of the British Transport Commission, are placed in a difficult position. On the one hand, they have the duty of providing an efficient public service; on the other, they have the obligation to make ends meet. This is ground on which I must tread delicately. I am, however, frequently asked about the Victoria Line, and as Chairman of The London Travel Committee which reported to the Minister of Transport on the case for the Line, I may perhaps quote one sentence from this Report: 'We recognize that the Line is not *prima facie* a profitable commercial investment as things are. But we believe that the improvement that the line could bring to the public transport services in London is necessary and that this improvement would confer large benefits on the travelling public.'

If there were a single authority (of whatever type) ultimately responsible, then they might decide that it was cheaper to subsidize public transport, to make certain that the services were good enough to protect the social fabric of life in London, rather than to be forced to undertake road construction to the extent that would be required to enable a much larger proportion of the public to travel by private car. Certainly that is a question which must be faced before the public transport

system is allowed to deteriorate further. The best time to get out of a vicious circle is at the start.

There is one further practical suggestion I should like to make. By tradition most 'buses use the main routes. Now that, with parking meters and additional one-way workings, we have cleared so many of the secondary routes through the West End, I suspect that the 'buses would be more efficient if some of them used these secondary routes, such as George Street and Upper Berkeley Street.

We ought to try and prevent 'buses from running in the most congested streets, and also from making the kind of traffic movements, such as right-hand turns, which themselves are the cause of congestion. If 'buses have to use congested streets, we might be able to give them priority in certain lanes.

PLANNING PROBLEMS

The final question I want to consider is planning control. I think that up to now planning has failed so far as transport is concerned. It has not been a failure of intention but of execution. What is needed is a recognition of the fact that transport is an essential and fundamental part of planning. Transport cannot be laid on like gas. New development should be planned round a transport system, whether existing or projected. It is necessary on social grounds that there should be satisfactory and efficient public transport. But this cannot be provided if the planning is done in a vacuum and the transport scheme left to last.

As an example, there is some spare capacity on the suburban railway lines north of the Thames, but on the Southern Region, which already takes three-quarters of the commuter load, little further expansion of services is possible within the existing framework of line and equipment. Housing development is, however, still continuing in these areas, but that means that there is no prospect of an adequate service unless there is a decision to duplicate lines and go in for other large-scale capital expenditure which would be on a vast scale, and without any hope of an adequate return.

To take another example, transport can only be economic if peaks are avoided and if reasonable balance is maintained between traffic travelling in both directions. Balanced development along the lengths of the railway main lines might well secure this. And to repeat the earlier point, it would also help enormously if office development was concentrated near the main line railway termini (for example, Euston, Kings Cross, Victoria) and kept away from the Central Area (for example, Mayfair) where the traveller depends on overcrowded 'buses and tubes. Part of the centre should be kept for shops, places of entertainment and residences. There can be no point in allowing more and more office building in the centre, when there is no real hope of ever providing adequate transport to cater for its needs.

I think I should give one further instance of what I am trying to suggest. There has been a major development project at Roehampton, where there is complete dependence on 'buses and private transport. All those who live in this new development area, and wish to work in other parts of London, will either have to struggle on to the 'buses, or use their own transport. Development in this fashion is certainly

not the way to promote the greater use of public transport, and seems to indicate a lack of realism on this subject.

At present we plan with green belts, and insufficient housing inside the belts for the population, so that, as a result, an ever-growing number of people have been forced to live far out. There has been much discussion about this problem over the last few years, and there are now some welcome signs that there will be more residential development in the centre. But I am still not certain that sufficient thought has been given to the enormous advantages of people living close to their work. It seems to me that it would be much better if development were concentrated in the places where there is transport, such as along the railway main lines, and if there were green wedges, running quite close to the centre of cities, in those sectors where transport is inadequate. A radial transport system and green belts can hardly work together in harmony, but we have the two systems, and must find some way of solving the problem.

Finally, in this planning connection, it may be worth pointing out that the London Transport Executive have recently estimated that employment in the Centre of London, almost entirely in offices, will still increase by about 6,000 a year for the next ten years. Even if a local authority desires to exercise tight planning control, their powers are still not complete. Provided that the user is unchanged owners of industrial premises can as the law stands at the present time, automatically extend their buildings by 10 per cent without having to obtain planning permission. If therefore it were decided that it was essential on transport grounds that employment in London be stabilized at about the present figure, then this is a loophole in the planning laws which would certainly need to be closed.

To sum up the planning aspects—what is needed is a plan, based on the use of public transport by the great majority and worked out on a realistic estimate of what the existing radial pattern of public transport is designed to achieve. The aim would then be to secure that the centre of London, as we now know it, remained the focal point with reasonably free access between that point and the rest of the area. If that is not achieved, then London will lose its present pattern, and may well reform in time on a cellular basis with a considerable number of local centres, but no main focal point. It would also tend to expand still farther, as some American cities have done. In my view that would represent the victory of the motor car over man, and would be a social disaster. But with proper and realistic planning, I believe this can be avoided.

CONCLUSION

I find it difficult to sum up this Paper, because as I said at the beginning there is no one solution, and I am only trying to indicate some possible ways of advance. I do not think total victory is possible, but what is possible is amelioration of present difficulties, and our eventual arrival at a position where transport difficulties are not so severe that they are likely to cripple the life of London. Of course, it is most desirable to press on with the various schemes of road improvements, including improvements at junction points and bottlenecks that are already in the programme. But this is by no means all. The full solution to this difficult problem depends on

adequate knowledge, and on power with responsibility. That is why I concentrated in the first place on the problem of administrative control. We must have an authority armed with ample powers. They will have to take steps, by traffic control, to keep the streets clear, and to ensure that there is an adequate system of public transport. This would confer an enormous benefit on all road users. Nothing short of this can produce the public transport and traffic conditions that the citizens of London have the right to expect.

DISCUSSION

MR. G. VIVIAN DAVIES: I rise not only as a Fellow of this Society but as a member of the works committee of one of the Metropolitan Borough Councils. I am afraid I have to join issue with Mr. Samuels because I feel that he has not given us many constructive suggestions. It seems to me that at one end of the scale the authorities are doing their best to keep all cars off the road. At the other end of the scale the Government is urging the motor industry to turn out more and more popular cars. It reminds me of an irresistible force meeting an immovable object

I suggest that the parked car itself is not the sole cause of obstruction in cities like London. For instance in wide roads like Piccadilly, Regent Street or Victoria Street, unless you park a car on a corner or intersection you are causing little obstruction. What has happened is that the regulations have forced cars from the wide streets into the narrow ones, and congestion has resulted. One of the greatest causes of congestion in the centre of London is not the parked car, but the habit of road users, and particularly the drivers of London Transport 'buses, of blocking all the intersecting roads irrespective of the situation of the lights. You find Oxford Street, Piccadilly, Regent Street, a solid jam with heavy traffic, and until the police come nobody will leave space for other traffic to cross, and congestion is spread from one main road to another. Very little has been said about delivery vans. Very little has been said about the habit of taxi-drivers stopping in the middle of the road.

All these things add to traffic congestion, apart altogether from the question of the parked car by the side of the road. We have seen, during the pink zone, Oxford Street and Regent Street loaded to capacity, with not a parked car in sight. One wonders indeed whether we have not taken these Christmas decorations and the pink zone to ridiculous lengths and whether the whole business side of London should be disorganized for the benefit of Christmas shoppers and people who want to come and gaze at the lights.

Mr. Samuels has referred to the warden question. The public were led to believe in the press, on radio and television that the wardens were there to help them, and tell them where to park. There is nothing like that at all. The police tell us their one function in life is to issue tickets and nothing else, and the Mayfair experiment (in the short time it has been operating) has made a profit of £150,000 a year. If that experiment is extended all over London, all over the country, that figure is going to run into millions. Who is going to use that money? It is not earmarked for off-street parking like the revenue from parking meters.

Finally, Mr. Chairman, in my opinion the only solution is one which Mr. Samuels has hardly touched on, and that is provision in every new building in London, not only for the cars used by that building, but for the cars that visit it, with the accommodation thrown open to the public at night when that building is otherwise closed. It is a simple matter to park cars on the top of a building or in the basement. What is the use, Mr. Chairman, of Metropolitan Borough Councils laying down regulations to make developers put in underground garage accommodation, when the developer can appeal to the London County Council and get that requirement withdrawn? The L.C.C. to my mind are the biggest offenders in this lack of off-street garage space.

THE LECTURER: Well, I was a bit disappointed when Mr. Vivian Davies sat down! I have been ticking off his list, and—let me see—we have quarrelled with the taxi-drivers, we have quarrelled with the 'bus drivers, we have quarrelled with the Christmas shoppers, we have quarrelled with the traffic wardens, we are a bit unhappy about the money and we finished up with the L.C.C. There is not much right with the world. Seriously, the L.C.C. are concerned; they are really doing what they can to make provision in new buildings for underground garages. It may not go as far as you like, but it is a substantial movement away from their original position and I think they have done well.

It is a fact that by putting up those lovely decorations which make London so attractive (particularly to me) the most serious congestion has been caused. But you know, the congestion only really happens in the evening on Saturdays and Sundays.

MR. VIVIAN DAVIES: I do not think it is only on Saturdays and Sundays.

THE LECTURER: On the question of money, I think it is perfectly true that the amount of revenue coming from parking meters in one particular scheme in Westminster is extremely high, but I advise you not to draw the yardstick from that. I think you will find that by and large the curve will flatten out, but in any case, the receipts from parking meter schemes can only be used for the purposes contained in the Act, to provide off-street car parking facilities.

MR. VIVIAN DAVIES: It was not the parking meter revenue I was referring to, but the proceeds from the £2 fines on tickets issued by these wardens.

THE LECTURER: Well it is early days yet, but if you take the number of towings away which were done in the first place, you now get a high degree of compliance with the regulation—such that the amount does taper off very considerably.

MR. P. K. SHAHANI: How far does the lecturer think the ring-road should be from Charing Cross?

THE LECTURER: How far from the centre ought the ring-road to be made? Well, that is a very good question, but one cannot say whether it ought to be two miles or seven miles. This is the kind of thing that a survey would establish, and I do not think there is any other way of doing it.

MR. A. POWIS BALE: Has Mr. Samuels any suggestions to make for utilizing spaces in London, which are now wasted, for parking. The old Aldwych Tunnel, for example, could be used. Those who have been to Hyde Park since the obstruction began at Hyde Park Corner and have been forced to go into the Park will realize how little the ground to the right of their route—that is between that route and Park Lane—is used. You rarely see a pedestrian on that footpath, and providing you kept a screen of trees, between it and Park Lane, you have there got unlimited parking space which could be used for the unfortunate motorist.

I agree with Mr. Vivian Davies, that in the evenings we should utilize the unwanted space in these big buildings which have garage facilities.

THE LECTURER: I agree that we should make the maximum use of any space that is available, and so far as I know we are directing our energies towards that particular objective. Consider, for example, what is being done with regard to the Christmas traffic. You see an example there of joint action by the London County Council and the Government (particularly the Ministry of Transport) whereby they have used a number of sites which are awaiting development for the very purpose you have in mind. And I should like to say this: if you yourself know of any particular site that could be used and is not in fact being used for the purpose you have in mind, I should be grateful if you would let me know, and I will certainly look into it. About Kingsway Tunnel: that is now going to be used as an underpass, and I hope in the not too distant future you will see a lot of activity there and the project well under way.

MR. STEPHEN PRESTON: I am here as a journalist. This is the sixth confabulation I have attended in the last few months and, because of what has *not* been said, I cannot keep my silence any longer. In my view it is incredible what a high percentage of London taxi-drivers behave badly on the roads. Yet they are immune from any proceedings. I wonder why. If private motorists behaved as taxi-drivers do, they would certainly be punished.

The other thing I must speak about is the disregard shown by London Transport Executive for the travelling public. People are being driven out of the centre of London because of this pink zone persecution; no facilities are being provided for them, so they must of necessity travel by 'buses—and what is happening?—they stand in the rain for twenty minutes until the 'bus comes along and then the conductor says 'Full up'. If it is one minute past seven they will not take you as a standing passenger. Under the traffic regulations they are entitled to carry eight standing passengers at rush hours or at other times if undue hardship would be caused to those who might otherwise be left behind. This regulation has never been revoked and yet never brought into use at all. The 'five-only' standing regulation has been 'cooked up' between L.T.E. and the Unions and has no legal sanction. Now there is nobody as far as I can see who can take the part of the travelling public in this matter except the London Transport Users' Consultative Committee and I subscribe to the view that this is a subservient organization which is not interested in doing anything, and does not want to know about the travellers' problems.

This practice of putting up parking meters and driving people off the streets without first providing any off-street parking for them is utterly ridiculous. But if it is necessary to do it, then let us put the L.T.E. into order.

THE LECTURER: Should the parking meters have been installed first, or garages provided first? That is a reasonable question, and one which I want to try and face. Let us have a look at the facts. From 1946, in the central London area, apart from Lex's garage, there were no new garages built at all, and despite the availability of large numbers of sites, neither local authorities nor private developers were prepared to build garages. Why not? There were fifty thousand cars standing about in streets with almost nowhere to go. And what happened? Lex's built their garage and it remained almost empty. The alternative was the street, because the street offered free parking and it made a mockery of the garage. The difference now is that local authorities and private enterprise are satisfied beyond all reasonable doubt that the time has come, and the Government have made up their mind that the control of street parking has become a vital necessity and that no longer shall the central London area be the biggest open air garage in the world. As a result people now are investing money, and local authorities are playing a great part, notwithstanding the expense, in providing garage accommodation complementary to the introduction of their parking meter schemes.

The pink zone and Christmas restrictions—were they necessary? Do they represent some whim or prejudice of a particular person at the Ministry, or the Police, or are they the result of careful planning and related to the facts and the experience that went before? Observations made by the Police and London Transport Executive in 1958 of the obstruction caused by traffic, and the waste mileage as a result of 'buses having to turn round, showed that it was on an unprecedented scale, and in some parts of the central London area some of the 'buses were stationary for periods of up to 75 minutes. You cannot build all new roads; you cannot serve a compulsory purchase order on the whole of Oxford Street and Regent Street and Bond Street. The fact is that the introduction of the pink zone last year was an unqualified success. London Transport 'buses were running very much better and Associations like the Traders Road Transport Association and the Road Haulers Association, who deal with commercial vehicles, were delighted with what had happened. And it is because of the encouraging statistical information provided by these bodies that the Minister

in consultation with the Home Secretary decided this year not only to bring back the pink zone, but to enlarge and extend it.

MR. B. H. HARBOUR (Member of London Transport Executive): I am also a member of the London Travel Committee over which Mr. Samuels presides. May I deny as categorically as I can the statement made by a previous speaker to the effect that the Transport Users' Consultative Committee is subservient to the British Transport Commission and London Transport Executive and not interested in travellers' problems. The Consultative Committee is an independent statutory organization and a representative body which deals fairly, faithfully and without fear of the Commission or Executive, with the public's complaints.

I should like to congratulate Mr. Samuels on what I think has been a comprehensive, fair, and reasonable review of this complex London traffic problem. London Transport is probably the biggest single user of our streets to-day and is vitally concerned with this traffic problem. Mr. Samuels referred to the need for a modern and attractive public transport system. How right he was. I should like to assure you, Sir, and Mr. Samuels and my colleagues and friends who are here tonight that it is London Transport's intention and British Railways' intention that the public transport system of London shall be as attractive and as modern as it can possibly be made.

A MEMBER OF THE AUDIENCE: When?

MR. HARBOUR: These things cannot be done quickly because millions of pounds are involved, but I would remind you that big programmes of modernization are already under way. On the Underground the whole of the rolling stock used on the Central Line and Piccadilly Line is being replaced. Large quantities of new rolling stock for the Metropolitan Line are on order and a major rehabilitation scheme for that line north of Harrow-on-the-Hill is nearing completion. The whole of London's 'buses have been replaced since the war and further replacements are going on; the obsolete trolley 'bus system is disappearing and the trolley vehicles are being replaced by diesel 'buses of advanced design. And I should add how glad I am that Mr. Samuels mentioned the Victoria Line. That is a matter for Her Majesty's Government. I should like to go on record here tonight to say that it is an urgently required traffic scheme, and that it has the full support of London Transport Executive and the British Transport Commission.

Mr. Samuels has stressed the importance of proper relationships between town planning, road planning and transport requirements, and he referred in particular to the need for associating office building more closely with the main line terminals, and he added in parenthesis almost, along the main line railway routes. I would impress upon Mr. Samuels the need for a decentralization of office accommodation to a greater extent. We have seen some of it going out to the country area round London. (I live in Leatherhead, and near Dorking a large insurance office has been erected in the last few years next to the railway station.) We should get more offices out into the country, and I would also plead for more office development in such places in the inner suburban centres as Hammersmith, Wood Lane, Islington and Clapham.

MR. C. D. MORGAN (Secretary, British Road Federation): First, may I say that I share the last speaker's admiration of Mr. Samuels' work? I should like to make the point that with many of London's traffic problems, and with many of London Transport's problems too, it is very possible that more than one solution exists. For example, the question was asked whether it was a good idea to introduce parking meters before parking garages—and Mr. Samuels has explained the reasons. But if he went back nearly a decade, he would recall that at that time he held the opposite view. Would he care to comment on the fact that whereas there are some 5,000 meters in the West End and only one or two off-street parking garages built or under construction, in the City of London (which is, after all, very much a part of the central

area) the situation is the reverse. There, in a square mile one garage is open and five are under construction. Within the next year they will all be in use and quite substantial off-street parking facilities will be available at a time when any parking meter scheme is introduced. What were the different circumstances that dictated meters before garages in one part of London and garages before meters in another?

THE LECTURER: It is perfectly true that I sent in a report in 1953 recommending that when parking meters are installed they should be accompanied by provision for off-street car parking accommodation. That is what I said: but you know we all grow older and wiser, and all the evidence goes to show how wrong I was, and I am grateful to you for giving me the opportunity of saying so.

You raised the comparison between Marylebone and the City. You said in the case of the City that they built garages and no meters, and I think you were concerned as to the reasons for that.

MR. MORGAN: I think you will find that in the City of London a parking meter scheme is now in preparation.

THE LECTURER: Yes. What happened was this: in the City they had built and are building a number of garages, but the fact is that they are not being used. For a long time that garage in London Wall which holds 250 cars had a maximum utilization of something like 19 cars. I think it is to the credit of the City that they were sufficiently flexible to take into account the fact that garages were being provided but not being used—not being used because people could find places in the street to park free of charge. And so, as you said, Mr. Morgan, they have now had to introduce a comprehensive system of metering for the whole City, and once the meters are there all will be well. I am sure about that.

MR. MORGAN: May I point out that that was not what I asked. In the West End, kerbside parking is controlled by meter and there are no reasonable off-street parking garage facilities. I was underlining that and asking why it is possible, in the City of London, to build the garages first and when those garages come into use, the City has its parking meter scheme ready. I entirely agree that parking meter control is probably necessary to fill off-street parking garages. The effect of introducing meters without off-street parking is to dispossess the many motorists of parking facilities at all. That is what has happened in the West End. When parking meters come to the City, motorists will no longer be able to park for hours at the kerbside, but at any rate they have the facility, for which of course they must pay, of parking off the street. That choice is denied in the West End.

THE LECTURER: Well, it is a difference of outlook. In the case of the West End there was the view (which I entirely associate myself with) that the meters came first. That is what happened in the West End and I think that experience has shown us how right that principle is. With regard to the City of London they took another view. Their view was that garages come first.

THE CHAIRMAN: I can add to that. The City decided originally not to have meters at all. They thought it would be sufficient to have adequate off-street garage space and they did not wish to have meters on the streets of the City at all. They subsequently learnt, as Mr. Samuels said, that the off-street garages are not much use without the meters.

MR. NIGEL SEYMER: There is one sentence in Mr. Samuels' paper which reads: 'That means that we must not provide more parking facilities, whether by way of parking meters on the street, or by the way of off-street garages,' than is necessary for the number of cars that the street network can accommodate on their way in and on their way out.' I think that is the most important sentence in Mr. Samuels' whole paper. I think this is absolutely vital: to preserve this balance between parking capacity on the one hand and street capacity for moving traffic on the other.

It seems to me that most of our trouble has been caused because we have not kept this balance with all this free parking over the last ten years or so. There used to be fifty thousand or more cars parked on the streets. We have got rid of them now, but if we are now going to provide off-street parking for fifty thousand commuters we shall have them all back again. It seems to me that the peak hour problem will be back, and we shall be back where we started, if not worse. That was the experience in America after they started building radial motorways, and the danger becomes really acute when you do start building radial motorways. Whether we are going to do that I do not know.

I do not think that we can in fact increase the capacity of the central London street system very much. If we increase it by ten or twenty per cent we shall be doing well. I think the Nugent Report is a little misleading, if I may so, in implying (if you read it carelessly anyway) that we could increase the capacity of our street system, even in the central London area, by about fifty per cent. That is nonsense. You could not do anything of the kind. You could not increase the capacity of Piccadilly Circus by fifty per cent, or Oxford Circus, or Parliament Square, or a dozen more intersections one could mention. At these places you just cannot get a big increase in capacity; and therefore for goodness sake let us keep the volume in that central area down to a manageable amount, whatever we do outside that area.

MR. J. A. C. KING: If I might follow up the theme raised by the last speaker, it seems to me that some encouragement should be given to people who bring their cars in from the outer suburbs to leave them before they get into the central area—and that encouragement must obviously be financial. Therefore the cost of the 'bus or tube fares from parking sites to destination, plus the cost of any parking fees, must be less than the cost of parking in the central area. There have been suggestions in several official and semi-official reports that there should be a number of garages round the inner ring-road. I am going to suggest that the most effective solution would be large car parks immediately adjacent to several of the tube stations which were tube termini about thirty years ago: places like Golders Green and Hendon, Finsbury Park or somewhere just beyond; and that the public transport facilities from those points to the whole of the central area should be very frequent and very reliable. In fact, I think the majority of people who find private transport a great advantage in outer suburban areas would find public transport an advantage in the central area. I would only bring my car into the central area nowadays if I was either coming in late and expected to find somewhere to park, or if I was actually coming to pick up a substantial quantity of goods from a store or something like that. The rest of the time I find it far more convenient to park before I reach the inner-ring road and to use tubes or 'buses after that.

One other point which was raised earlier was the question of relating parking space to new buildings. It should not be a very difficult proposition for the planning authorities to apply this principle to designated areas, and to say that for the whole area to be built on on any site the ground floor level should be reserved for parking space. In other words, put the buildings on stilts. There is no reason at all why a start should not be made in this way. The planning authorities could insist that buildings planned from tomorrow onwards should be so constructed that by a given date, perhaps in ten years' time, the ground floor could be cleaned out and become a car park almost overnight. The main function of the building should start at first floor level, and pedestrian bridges and footways should be erected at first floor level as well, because you then separate your pedestrian streets from your traffic streets. In a matter of forty or fifty years we should then have at least two-decker cities not only for the centre of London, but also for such other places as Birmingham, Merseyside and Manchester.

THE LECTURER: Mr. King, your point about planning consent being given only

when more off-street parking accommodation is provided in buildings, is an interesting point, but it is one I do not feel competent to express anything about. I am sure there are quite a number of people here tonight who are interested in that particular aspect and I am quite sure they will give it some serious thought. On the question of the financial inducement, I cannot accept your argument. I think there is now an inducement to parking a vehicle some way away and then coming in by public transport, providing the transport conditions are reasonably comfortable. If you can travel in comfort, get a seat, read the paper, do some office work—that in itself will be an inducement.

The other point you made about providing car parks at stations is of great value. If this kind of accommodation could be provided at a number of railway stations, it would keep people from coming into the centre with their private cars, and at the same time it would make life more varied. But it does make one presumption: that the transport facilities and services are available.

MR. A. W. HOGG (City Engineer, Westminster): I should like to refer to parking facilities in buildings. Much might be done by providing car space beneath buildings, but to suggest that every building should have the whole of its ground space devoted to car space is going too far.

Incidentally, whether we like it or not I am quite convinced that, whilst we may do a lot to improve our roads in the centre of London it seems it is inevitable that we must make the traffic fit the roads rather than the roads fit the traffic.

We know that the planning authority does require, wherever it is practicable, that a garage should be provided within the site of a new building with sufficient space to meet their standard of car-parking requirements. That may be all right on big sites where you can so place the car-parking accommodation in relation to means of access that it does not interfere with traffic on the highways, but in central London so much of the development is done piecemeal. Many small buildings are required by the planning authority to provide space for two or three cars in their basements. That may be done at great inconvenience and considerable cost to the developers, but what is the ultimate result? It will create in all of our cities lots of little entrances and exits to and from these small garages, each discharging two or three cars on to the public highway. Could some legislation be devised whereby these small developers who must provide two or three car spaces could contract out of that planning requirement, but yet contribute to some central fund the equivalent cost of providing these few spaces? The authority to whom they contribute might then build big garages on suitable plots and allocate the proper number of spaces to each of these people who have contracted out of their planning obligations.

A REPRESENTATIVE OF THE ROYAL AUTOMOBILE CLUB: Mr. Samuels has referred very optimistically to plans for the provision of parking garages in the future. The problem is very much with us now. I should like to ask Mr. Samuels whether, with the spread of parking meters in London, he will accept that the amount of off-street parking space available is grossly inadequate? If so, will he agree that emergency car parks are not merely required at present but throughout the year?

THE LECTURER: The additional car parks now in use to deal with the Christmas traffic are in fact brought into being to cater for the substantial increase in the numbers of cars coming into the centre, and as you know that is one of the very real problems. It is a fact that substantially more traffic does come into that particular section, and with a view to providing accommodation those temporary car parks have been provided.

On the specific question—do I think that in the metered zones at the present time the car parking accommodation is adequate for the displaced vehicles—the answer is, no. I believe that when the number of parking meter schemes grows (and grow they will), there will be a progressive increase in off-street car parking accommodation

in multi-storey garages. But if the broad question is, do I think there ought to be garages provided to enable all the cars to come in, the answer is I most certainly do not.

THE CHAIRMAN: It falls to me to express on your behalf a word of thanks to Mr. Samuels for his paper and his able answering of the questions. You will have perceived that to be a traffic expert requires not only technical and mechanical knowledge of affairs but also a certain native wit. You do not start life as a London taxi-driver for nothing!

I am sure you will agree with me that he has succeeded tonight in bringing together the various factors in this extremely complex picture of transport in a great city. Those who aspire to help in the solution of this problem at the centre (where Mr. Samuels has been for many years now a very great help) must be able to perceive the various factors in the picture, hold them firmly in their mind and get them in the right perspective. I think you will have seen tonight how clearly Mr. Samuels managed to do that. Of course people feel passionately about transport, but when you are at the other end of the situation you have to try and see what is possible; you have to try and provide for the complex habits of millions of travellers who go in and out of London every day, all of them wanting to do what they want to do when they want to do it. Public transport is, as Mr. Samuels rightly said, the basis of our life in London and although criticisms may be aimed at it, the fact is, as you will know from all your travels about the world, that with all the deficiencies and defects that the London Transport system may have, it is still far the best in the world. There are plans to make it better; plans which I hope will finally emerge in the Victoria Line; but we are extremely lucky in London that our public transport system of tube and 'bus is as good as it is, and believe me there is not a city in America that would not give its eyes to have the London transport system.

Then in the field of traffic we have to accept the hard fact that discipline has to come first. Whatever you do you will not make Piccadilly Circus or Regent Street, for example, any larger. If we wish the face of London to remain as it is those streets cannot be any bigger and so there cannot be more than a certain number of vehicles moving through them. That must be so, of course, for all central and shopping streets in London, and therefore what we must have is the most careful discipline in order to get the maximum flow of traffic through the streets; meeting the necessities of stopping vehicles, of vans and so on, and above all meeting the necessities of the public transport; and quite inevitably one has to take control of the parked vehicle. My own impression was that Mr. Samuels dealt most ably with that as the first necessity if you want to get any kind of sense into the movement of traffic and the most efficient use out of the existing street system. I had the privilege of opening the first parking meter system in this country, in Grosvenor Square, and very happy I was to do it. I have been able to give some study to this matter, and indeed to see what goes on in American cities, and I was quite convinced that despite the toughness of the policy of putting in the meters before one got the off-street garages, this was the only way that we could make any sense of this situation. The City of London have kindly proved it for us as well, if we needed any further proof.

Mr. Samuels has put the complex factors of the situation in their right perspective. He has enabled us to see that what must be studied is the maximum convenience of the community as a whole, and we thank him very much indeed.

The vote of thanks to the Lecturer was carried with acclamation.

THE LECTURER: I should be less than human if I were not truly grateful for the kind things Sir Richard has said about me and my paper. It is all the more valuable to me because no one knows more than I of the very great part which Sir Richard played in dealing with these particular problems during his long period as Parliamentary Secretary at the Ministry of Transport.

MR. R. E. DANGERFIELD: It is my privilege as a Member of Council to ask you to join with me in thanking Sir Richard Nugent. No more appropriate Chairman could we have selected.

Before you go away, may I mention an observation I heard the Minister of Transport make to-day, which I think is not inappropriate to this meeting. He said that when he was Postmaster General he found himself with twenty million critics and twenty million experts. As Minister of Transport he was faced with fifty million critics and fifty million experts. I thought while Mr. Samuels was speaking of how he must sympathize with that point of view.

Thank you very much, Sir Richard, for taking the chair. I hope your car has not been towed away.

The vote of thanks to the Chairman was carried with acclamation, and the meeting then ended.

THE ARCHITECT'S APPROACH TO ENGINEERING IN TALL BUILDINGS

A paper by

SIR THOMAS BENNETT, K.B.E., F.R.I.B.A.,

read to a joint meeting of the Society and the Institution of Plant Engineers on Tuesday, 6th December, 1960, with the Rt. Honble. Lord John Hope, P.C., M.P., Minister of Works, in the Chair

THE CHAIRMAN: I should like to say one thing, very shortly, by way of introduction, so far as my chairmanship to-night is concerned. I was extremely flattered to be asked to take the Chair, and I was encouraged by at least the possibility that I might be that very rare thing, the almost perfect Chairman, in so far as I know absolutely nothing whatever about the technical aspects of the subject which we are going to hear about to-night. As a Member of Parliament for a good many years, I have—I was going to say 'suffered' but that would be unfair—spoken under many different chairmen in my time, and I must say that I have sometimes wished that they were as careful as I am to-night about the neatness of keeping silence and letting the chap who is going to make the speech get on with it.

I shall be very interested indeed to hear what our distinguished speaker has to say.

Before I introduce him finally, I should like to take this opportunity of saying one word about an aspect of high buildings with which I, as Minister of Works, have something to do. I refer to the aesthetic side.

The subject of tall buildings is, of course, controversial. But the fact is that they provide an obvious answer to the problem of an expanding population in a static area of land, and that they have therefore come to stay. Quite apart from that, they can be very fine and very beautiful if they are imaginatively designed and well-planned in relation to each other and to their neighbourhood. As far as I am concerned, as Minister responsible for the safeguarding of the amenities of the Royal Parks, I am certainly not against high buildings visible from, or even on the edge of, the Parks as long as they fulfil those conditions. I am anxious that that should be known. After all, height as such has been a factor in beautiful architecture for many centuries.

I need not say very much to this audience about the eminence of our speaker to-night. It is a sign of Sir Thomas Bennett's standing as an architect that two such apparently different bodies as the Royal Society of Arts and the Institution of Plant Engineers should have come together to hear him talk on the subject before us.

Perhaps I might refer to two of the fields in which he has distinguished himself. In recent years, he was Chairman of the Corporation that developed Crawley New Town. Secondly, during the war, he held a number of very important posts in the Ministry of Works, including those of Director of Temporary Housing and Director of Works. With all this experience behind him, we can be sure that Sir Thomas's address will be workmanlike, informative and of great value to us all.

The following paper, which was illustrated with lantern slides, was then read.

THE PAPER

In attempting to plan this paper so that it will embrace all the civil and mechanical engineering services in high buildings, it is quite clear that any detailed discussion of the individual sections is difficult, if not impossible. The problems, however, within this restricted compass are very considerable and those of us who have to deal with each section in turn may well have ample scope to develop ideas on the subject.

I therefore propose to commence this evening's study by showing on the screen a number of slides which will give a general indication ofthe types of tall buildings which are being erected throughout the world. In doing so I do not propose to pause over the name, purpose or location of the buildings, unless they involve considerations of principle.

Thick and Thin Buildings

Offices, hospitals and certain other types of buildings tend to divide themselves into plans which produce external light and ventilation to all rooms or parts of the plan, and those which expect artificial light and artificial ventilation as a normal working condition. In hot and cold climates a substantial portion of each year produces intolerable working conditions, and in these cases efficiency demands exclusion of the external air and artificial working conditions as a normal accompaniment of efficiency. In a temperate climate like England, pleasant conditions of working can be anticipated for many months, and in certain years for almost the whole twelve months. England therefore tends to plan on thin plans with external light and ventilation, and to regard air-conditioning as a semi-luxury. America, Canada, Australia and many other countries are faced with the necessity for artificial ventilation and consider the thick plan much more economic, and believe that in other ways it leads to greater efficiency. There is, therefore, a material difference of approach dictated by the type of plan employed in different countries.

I will at this stage show some slides of the substantial effect that lift banks have on thin buildings, and indicative of the effect of double lift banks on high buildings where they feed into the broad open spaces common to American and other plans.

Problems Arising as the Result of Lift Banks

In buildings tall enough to require two, three or more lift banks, the problem is further complicated by the large amount of space which such lift banks occupy on each floor, and the problems created where each lift bank terminates and where it is desirable to make full use of the space so released. The size of the building is also substantially affected by the proper relationship between the 'waste' spaces, i.e., lift banks, staircases, lift halls and ducts, and the percentage of useful space which the total area of each floor of the building brings into existence.

Using the office examples which I have shown, the type of lift plans dictates very largely the general structural plan on which the building must be laid out, and this applies whatever the shape of the building. The general method of vertical communications is the primary principle in the layout of the whole plan.

FIGURE 1. *An office building in Vancouver*

The shape of the structure is very largely dictated by the way in which the vertical communications are introduced into the building.

Since the lifts must rise substantially above the highest floor which they serve and become visible on the skyline in the form of towers, they become an important architectural factor on the exterior, where the building lends itself to a design having an architectural tower. But as they are often accompanied by the need for large plant rooms, substantial water storage and other essential provisions, the tower may become equal to a floor or two floors of the building, and the combination of lifts and services thus very largely dictates the final shape of the top of the building.

All high buildings create serious problems of wind resistance. They also aggravate the extent to which rain and weather can penetrate if ample provision is not made for weather resistance. The structural design of the building of necessity affects the planning to a substantial extent. If the lift banks and the ducts are properly distributed through reinforced concrete construction, they can do much to take up the wind stresses, and such solid portions of the building as staircases can become main structural factors without the necessity of providing for special structural

FIGURES 2 & 3. *An office building in Düsseldorf with* (right) *its typical floor plan*

walls which would otherwise affect the plan. In England the ends of the thin office plans have been frequently designed as solids with a small number of openings, and have thus become valuable means of resisting wind pressure in the most effective part of the structure.

On many 'thick' plans banks of services occur in the plan centre, and where lifts, lavatories, escape staircases and ducts are collected in this manner, they become valuable masses of reinforced concrete which go far to produce a stable building in themselves, and have many advantages for this purpose. Some of them—indeed, many of them—have the disadvantage of creating offices opening on to single-sided corridors and thus substantially lengthening the communications within the confines of each floor, and to this extent become wasteful plans.

Architectural Needs and Unusual Shapes

In England and in other countries, there has been an increasing desire on the part of architects to carry light types of architectural treatment around all four sides of the building, and in this case solid ends are unacceptable. In these cases the

engineer can move wind-resisting membranes one bay inwards from the ends of the building, and by forming unpierced or only slightly pierced reinforced concrete membranes from top to bottom, obtain his wind resistance by this means.

In addition to the very practical considerations which dictate the provision of solid cores in the centres of high structures for purely structural purposes, the shapes so produced have in many cases been accepted by the owners of famous buildings as having a highly distinctive and individual character which by visual examination and by world-wide illustration have brought the names of the owners of these buildings into world-wide prominence. The coffin-shaped Pirelli building in Milan is universally known, and the name of Pirelli with it. Capitol Records built a circular building, clearly designed to indicate the shape of the product for which it is famous. The tower shapes with short projecting legs, three or four in number, triangular shapes with straight sides, and similar shapes with hollow sides, all indicate cases which, apart from cost and economy, have special reasons for their basic design.

Certain types of rectangular shapes with a core of the lifts and services, can be planned in such a way that the whole of the remainder of the building is cantilevered from this solid core, thus leaving the whole of the external walls free for the provision of windows, for light architectural treatment, and free from the major confines of construction.

Ventilation of Central Cores

In air-conditioned countries these central cores contain the lifts, lift halls, escape staircases, lavatory accommodation, air ducts and service rooms, all embracing space which would be required wherever they may be placed; ventilation ducts placed in these cores will produce economies in the running of the services, in the sizes of the ducts needed and in the ease with which the air can be distributed to any portion of the perimeter.

It is a necessary accompaniment of this solid core that where the type of plan used in England is essentially of the continuous corridor and the day-lighted office, the relatively wasteful plan and the great length of corridor system is inevitable. Since all the offices are approached by a corridor with offices on one side only, the total corridor length is appreciably greater than that of a building where offices are on each side of a central corridor.

Depth of Offices

In America and Canada, to a large extent in Australia and in certain cases on the Continent of Europe, the thick office without corridors seems to be increasingly acceptable, and office administration in these countries accepts the fact that for a large part of the useful floor space the user walks directly from the lift lobbies to the used space without any intervening corridor. In these countries, because of air-conditioning and the acceptance of artificial light, a much greater depth of office can be made into useful space.

The depth in England is limited to 20 ft. or even 18 ft., and in some cases less. America and many other countries will accept a depth of 40 ft. of office space and

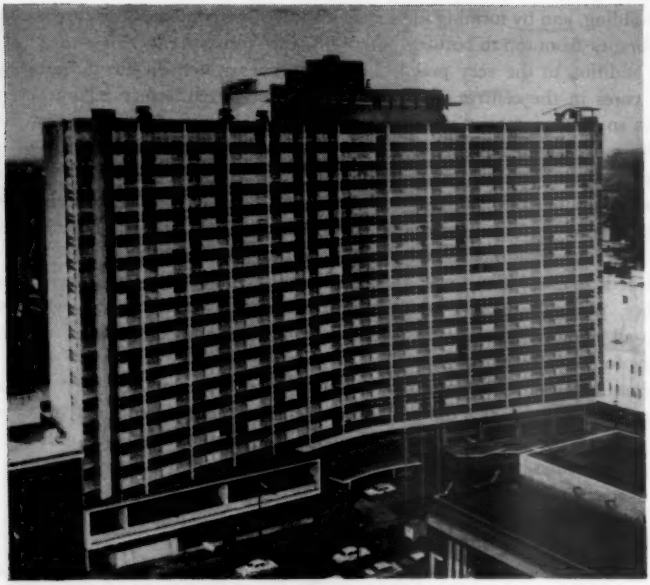


FIGURE 4. *The Statler-Hilton hotel in Dallas, Texas* (*cf. Figure* 5)

consider it all usable space. The method of administration affects the thinness of the space, since the advocates of thin offices declare that the occupants cannot work efficiently surrounded by large numbers of other workers with telephones ringing in various directions and no privacy for interview for those used to having offices attached to wide open spaces.

The advocates of thick offices consider that they cannot adequately supervise enclosed space, and that individual rooms with partitions all round are questionable. Rearrangement is seriously hindered if any section is sub-divided into small units. In the basic design of a building the architect and the engineer between them must produce a plan which takes into account the administrative principle of the office to be built, the administrative conditions, the necessity, desirability or demand for artificial air-conditioning, and the extent to which administration will accept working permanently in artificial light, and must join to all this the acceptance, wherever required, of an enclosed space which has no external wall or window.

Hospital Planning

In certain parts of hospitals, notably operating theatres, ward service rooms and lavatories, thick planning leads to compactness and efficient nursing, and thick plans are good plans.

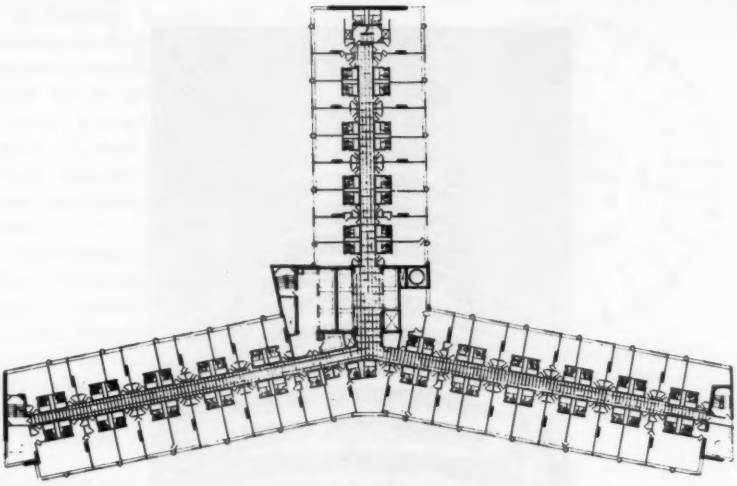


FIGURE 5. *Typical floor plan for the building shown in Figure* 4

Prestige Buildings

There are certain considerations which override these factual conditions in the case of what have been called prestige buildings. Certain firms of international standing consider that their own Head Office gains in distinction by being the tallest or amongst the tallest buildings, or so tall that it is outstanding in a large area amongst its neighbours, or is in the position near a river, park or another large open space where its distinctive shape can be seen for long distances. Such buildings are easily recognizable as the headquarters of a particular company, and their unique appearance is considered an asset. Clearly this distinction is less where there are already large numbers of tower-like buildings than in countries where tower buildings are relatively scarce.

Structural Mass and the Architect

For the purpose of structure therefore, many considerations other than the purely structural are brought into play, and a good many preliminary calculations may well be required from the structural engineer before the final plan is accepted, unless the architect is sufficiently familiar with the principles of framed building to be sure that the solution he has adopted meets the views of his client administratively and aesthetically, practically and economically.

Structural Floor Heights and Ventilation

There are also considerations connected with the decision about the main structural material and heights of floors. For many years in this country we built offices with an average height, floor to floor, of 10 ft. 3 in., but in recent years we

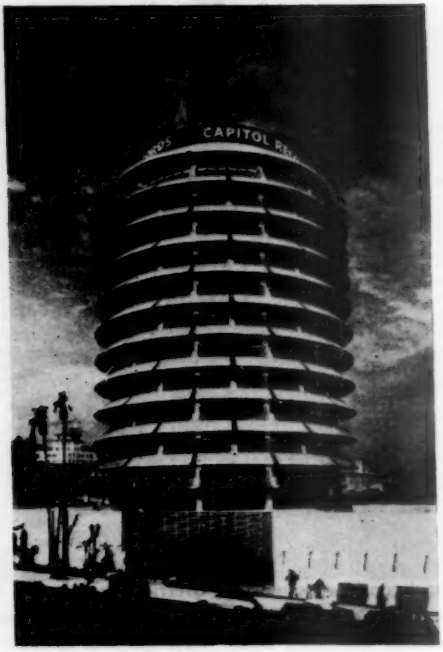


FIGURE 6. *The offices of Capitol Records in Hollywood, California* (*cf. Figure 7*)

have tended to reduce this to 10 ft. Broadly speaking, this provides an overall internal height floor to ceiling of 9 ft. If, however, artificial ventilation is to be used throughout the building, it is extremely difficult to introduce it within these height limits, and it may well be desirable or even necessary to increase the floor to floor height to 10 ft. 6 in. or 11 ft. This consideration of the introduction of ducts, possibly after the building has been constructed, or partly constructed, places a premium on beamless floors and slab construction. This in turn brings out the consideration in principle of the choice of the construction material as between steel and concrete.

Steel and Reinforced Concrete

For many years a steel frame building was considered to be more straightforward, more simple to construct and more rapid in construction than reinforced concrete. Various methods of spine framing have produced beamless slabs, and this in turn has produced problems at the heads of windows. Upstand beams may have to be used, and upstand beams themselves produce problems.

As buildings become taller the size of columns on the lower floors tends to become smaller in steel than those of reinforced concrete. On the other hand, the rigid London County Council requirements for solid casing of steel throughout the building clearly indicate the need for fresh study, since non-structural solid casing is uneconomic.

Improvement in reinforced concrete technique on the part of the building contractor tends to emphasize the advantages of this material. The position of the columns on the inside of the building creates, on the inside, difficulties in the runs of heating and other services, and some attempts have been made to put this construction outside, so far without any great architectural success.

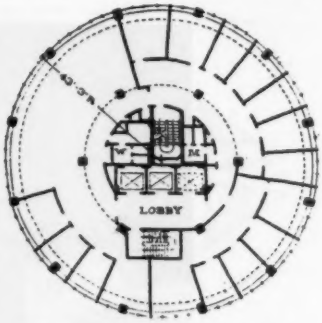


FIGURE 7. *Typical floor plan of the building in Figure* 6

Foundations and Loads

When buildings rise above 250 ft. in height the loads on the foundations of much of London's soil become excessive, and a means has to be found whereby the load can be spread or carried to a sufficient depth to be safe. It is perhaps not unduly pessimistic to say that we have yet to be quite sure of the methods we are using at present of foundationing excessively high buildings on a depth of 60 ft. or more; they have to be proved in practice over a series of years. We know that a great deal of the soil of London and other English cities is affected by weather conditions to a very considerable depth.

Certain types of large-bore column foundations are supposed to pick up an appreciable amount of load by friction, and in the course of building it frequently happens that one part of an extensive building proceeds in advance of another, and there are therefore serious points of differential settlement which must be made good either by adjustable joints or by some other provision which will somehow permit the different stages of the building to settle satisfactorily to the same level without cracking.

Thermal Movement

As long as we were using large amounts of structural steel, it was quite probable that some of the thermal movements which take place in modern buildings were able to operate without damage to the structure, because the innumerable joints of the steel frame pick up frictional settlement without undue difficulty. But as soon as the tall building with an extensive span becomes a monolith, then temperature changes—both from solar heat and from the high temperatures in winter in warm buildings, and the cold temperatures produced at night by thermostatic control—have a cumulative effect on the structure itself which requires special action.

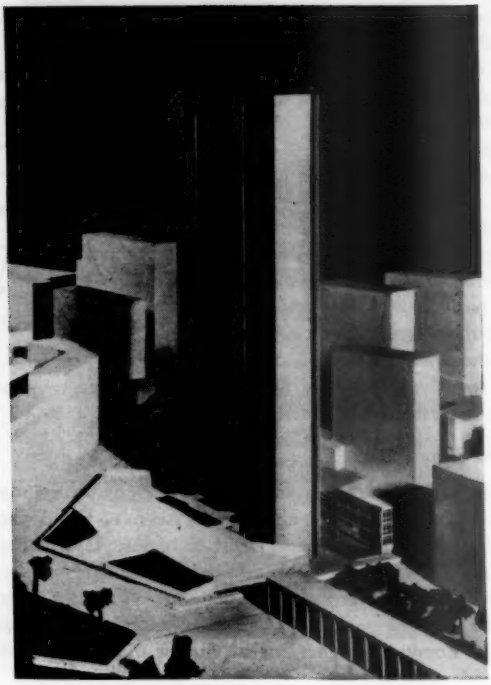


FIGURE 8. *Model of the Pirelli Building, Milan* (*cf. Figure* 9)

Expansion Joints

The introduction of expansion joints is regarded by most people as an inevitable necessity; and equally, most people, once they have introduced expansion joints, have sooner or later found trouble in keeping them water-tight, however elaborately they were planned and designed.

Ground Floors and Basements requiring Different Spacing

As the plan of the building is developed below the typical floor, the factors which I have enumerated and which govern the position of columns, of wind-resisting walls and partitions and the growing size of the columns themselves, lead to quite material complications architecturally and otherwise in designing entrance halls, large open shop spaces and similar changes of plan which are common in many types of buildings. Below the ground level it has now become almost universal to have garage space on a very large scale; the column grid on the garage level consequently becomes very important, and with the rigid demands of the parking

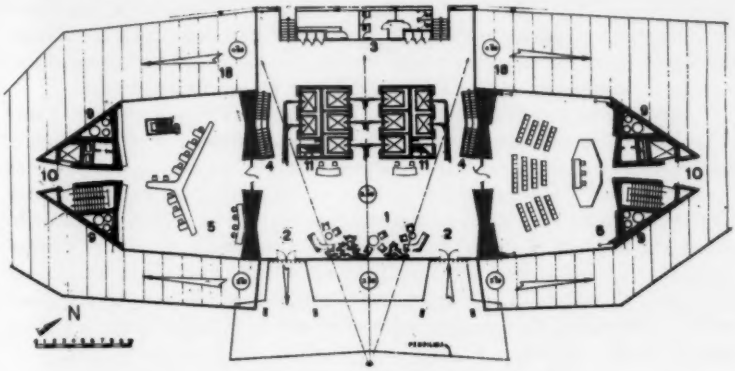


FIGURE 9. *Typical floor plan of the building in Figure* 8

owner or garage proprietor, presents a substantial difficulty. If there is to be customer parking, many garage men demand 16 ft. clear of the columns, which may well be a 19 ft. spacing for two cars, or for three cars 24 ft. clear of columns, which may well be 27 ft. or 28 ft. between column centres. In the opposite direction, a garage spacing requires clear 20 ft. span except in cases where 16 ft. parking length is expected, when there must be a 20 ft. span flanked on each side by two 16 ft. spans to produce the ideal garage grid. The engineering complications which accompany the change from the standard typical floor of the office, hospital or other plan to the wide-span requirements of the shop or store plan of the ground floor, the clearance of the entrance hall to produce a fine architectural effect on entering the building, and the further change to a desirable rigid plan for the garage storage space beneath the building—all present engineering problems of the first magnitude.

Steel Frames in America

In all the early history of New York and the American cities, steel frame construction was used. The steel, therefore, could be cut and framed to exact dimensions in the shops, and there was little, if any, chance of its getting out of true in the course of erection. When reinforced concrete is used, the case is not so straightforward.

Cladding in Various Materials

We have also to deal with the problem of cladding in a variety of materials. In the case of stone and granite, I have considered it quite essential that cladding should be given a gravity bearing on the frame at least at every floor level. This is quite possible if it is provided in the early stages of the design, and is not a matter of great cost. The intervening slabs must be fastened back in some adequate and secure manner so that proper anchorage is obtained and the material is not simply

kept in position by adhesion. With other materials, such as steel or aluminium containing glass or plastic, and some of the other more modern cladding materials, the movement of the metal parts in relation to the frame may well cause serious leakages if not properly anchored or provided with means of movement.

I would suspect that some of the earlier glass-cased buildings might easily prove to have serious maintenance difficulties. The water seeps through joints and is able to get into steel which is tying the face panel to the frame. Once this happens it is only a matter of years before serious corrosion becomes a major problem. If the frames are fixed free of the structure, I cannot help thinking that some of the long lengths of free cladding will be subject to very serious movement as a result of thermal forces or as a result of local movement, and will produce leaks which are difficult to control. We are all aware that extensive leakage in metal-frame cladding and serious breakages in glass were widespread on the U.N. building in New York when it was first erected.

Climatic Conditions and Survival

I think we are in a stage of development in England in which each architect is finding out the difficulties of our own climate when presented with the conditions imposed by tall isolated buildings picking up the full force of the elements. Many structures far above the surrounding buildings are receiving direct attack from wind, rain and the other elements to an extent of which no one has previously had experience.

The one thing outstandingly clear about the whole history of building is that in every new essay into a different type of structure the architect has had to buy a rather bitter amount of experience as a result of putting up the structure and waiting to see whether it would successfully survive.

Lift Service

I should like now to pass to some of the problems inherent in the lift service. There is a recommendation in this country that banks of lifts which are two-sided should be open to access only from one end, thus preventing passage through the lift halls, but it is common practice in America for such banks of lifts to have exits from each side directly into the general working halls previously referred to. It would appear therefore that no rule with regard to double-sided lift halls can be laid down. So far as single-sided lift halls are concerned, it is recommended that the maximum length of a bank of single lifts should be the length of four lifts. If the bank is longer than four it is extremely difficult for the waiting passenger to move rapidly to the lift which is stopping at his floor unless the waiting time at each stop is unduly prolonged, which would impair the general efficiency of the service. The same effect is produced if a corridor is planned in the centre of the lift bank, and the total length of the bank is therefore four lifts plus a corridor.

Alternatively, the lifts can be arranged in groups of two on each side of the lift approach, or in groups of three or four; and when more than eight lifts are required, it will be possible to start again with a fresh group. This simple arrangement is capable of a surprising number of variations. The dimension between the lift face of opposing banks of lifts should not be less than 8 ft. and there is a certain amount

of functional planning required if the two lift faces are not parallel, and if entrance is from the wide end towards a narrower end. The lifts can be run in duplex or triplex operation, thus reducing the waiting time during the day.

Passage is much easier if the lift cars are wide and relatively shallow, and in no case should they be narrow on the face and deep within. The number of passengers to be carried varies from 10 to 20, and in a big building heavily occupied there would, at peak periods, be very substantial movement each time the lift car arrives or departs.

The peak periods of the arrival and departure of staff vary substantially, but in the majority of buildings in single occupation, they are a quarter of an hour in length. (It is interesting to know that the extremely intense traffic of London Bridge maintains its maximum peak for little more than a quarter of an hour.) In a building occupied by many tenants, the period may be much longer. In the calculation of lift services, therefore, there should be a waiting time of between 20 to 40 seconds throughout the day; 20 seconds waiting would be excellent, and 40 seconds would be regarded as unacceptable. The 'building-emptying' time of lifts in maximum operation should be not more than 40 minutes. The emptying time for a building may be subject to many local factors. I think lift engineers are over-pessimistic about the congestion which takes place in the mornings and evenings with staff. They do not allow for the number of people who in our English offices are unfortunately late, or the number who manage to jump the gun at the finishing hour, neither do they allow sufficiently for the enthusiastic workers who frequently work beyond their specified hour and often in greater numbers than theoretical calculation prudently assumes.

The dividing line between a single lift bank and a divided lift bank for the higher and lower floors is placed at twelve storeys, and a second dividing line at twenty storeys and a third at twenty to thirty storeys. Dividing lines of various lift banks are recommended to be as follows:

Up to 12 floors—one bank—300/500 f.p.m.
Up to 20 floors—two banks the top—700 f.p.m.
Up to 30 floors—three banks the top—1,000 f.p.m.
Up to 50 floors—four banks the top—1,200 f.p.m.

Between twelve and fifteen storeys it seems difficult to decide that a second bank of lifts is justified, and in other cases administrative adjustments may be made with a single lift bank running all day, and with certain lifts taken out of circuit during the morning and evening congestion and made into high-speed lifts to serve a top one-third of the building.

It is worth while at this point to comment again on the accuracy of setting out, since for many years lift engineers insisted on having a clean lift shaft complete with lift house before they could commence the erection of the guides or other parts of the machine. In high buildings it is essential that the guides should commence from the bottom long before the lift house at the top. Lift engines at the bottom are rarely successful. Even at a height of 120 ft. rope stretch makes smooth running almost unattainable.

Floor coverings require early determination to provide for perfect landing

levels, and even then it may be discovered at a late date that the client has special requirements with regard to coverings on unexpected floors where the thickness of covering varies appreciably from that of the standard.

In high flats the placing of the lifts in relation to the rooms on the flat plans becomes important, as it is virtually impossible to prevent the noise of the lift shaft penetrating into the flat. Contactors present an even greater noise difficulty. With a different type of ground floor the underruns require consideration. In hospitals the clean and dirty sides of operating blocks could be nullified by bad lift shaft access.

Electrical Work

The major problems of electrical installation vary little from those met with in buildings of moderate height, but when very substantial heights are reached it may well be more economic to attempt to encourage the supply company to carry the main up the building and use a sub-station transformer for breaking it down to normal voltages. This would have the effect of reducing the size of the main cables which are needed. The use of long mains will follow much the same patterns as in ordinary buildings, and therefore the difference is really confined to the method by which the current is conveyed to the top of the building where the heaviest cables have to be used.

The tall building, especially the exposed isolated tall building, is more likely to attract lightning than an ordinary horizontal building. The use of lightning conductors tends to show on the sky-line, and the external tapes ruin the appearance of the façade. It is possible to take conductors in tubes inside the building and still secure a reasonable measure of protection by proper design of earth plates.

Probably electricity will affect the building more, owing to the increasing tendency to use substantial electrical equipment for administration. Heavy calculating machinery and other similar equipment may well be installed in any position, and the weight frequently exceeds the allowances for floor loading. It would seem a wise provision to make some allowance for mechanical equipment on every floor, or possibly on alternate floors with a larger area.

There is every indication that the use of accounting and other machines will grow, and one can only guess at the quantity of space which will be required for them. If the intending occupant can give precise plant plans before the drawings are made, the problem disappears so far as first occupation is concerned.

Plumbing and Sanitary Services

Unlike the electrical services, plumbing services vary substantially with increased height. It is considered ideal to store the equivalent of one day's hot and cold water consumption in storage cisterns within a building to prevent a shortage of water in the event of a breakdown of the supply services. Excessive pressure on the valves and fittings of all sanitary appliances would cause not only wastage of water and make it difficult for the user to draw off the exact amount of water desired, but it would also increase the maintenance necessary. Cold water down services should not have a vertical drop longer than 100 ft. Therefore cold water storage should

be arranged on every tenth floor or so to serve the section of the building below. Alternatively, the storage can be placed at a higher level to serve two or three sections, e.g., 20 to 30 floors, with break tanks at lower levels.

Booster pumps are required to raise the incoming water supply from the local Water Board's street main. They are usually in duplicate, one acting as a stand-by, and they would commence operation when 'called in' by a float switch in the high-level storage cisterns.

In some localities one is able to fix the booster pumps together with all necessary reflux, recoil and isolating valves on a by-pass to the incoming main, which would be continued up to the storage cisterns without a break. Such an arrangement makes use of the existing pressure in the incoming service, which in the Metropolitan Water Board area may well be 80 to 100 ft., and the booster pumps only have to add to this head to raise the water to the required level. Naturally, the local water company will have to be satisfied that the pumps are not too powerful—not able, that is, to fill the storage cisterns within an unreasonably short time, thereby depriving the adjacent properties of their supply.

In other localities—and this is generally the case where the water supply is restricted or intermittent—a break tank has to be provided from which the required water is pumped.

The size of soil stacks, and indeed that of branches receiving the discharge from several fittings, must be carefully calculated on the basis of the likely incidence of use of the fittings which are connected to it. There is a constant danger that during heavy use, air compression may occur within these stacks, particularly at changes of direction, or a partial vacuum in any straight length of pipe. Generally speaking, each soil stack has its companion anti-syphon stack to which periodic relief connections are made to overcome compression or syphonage (which may otherwise result in considerable nuisance) and to stabilize the pressure conditions in the stacks. The bottom of the soil stacks, where they discharge into horizontal drains, should be installed in long radius curves to facilitate an easy and swift flow and to prevent compression.

The sanitary fittings on the lowest one or two floors are usually taken separately into the drain instead of being connected to a tall stack. This is to avoid an overflow from a build-up in the bottom part of the tall stack. Fittings positioned immediately above an offset in the stack are similarly treated and would be connected below the top of the offset where compression may occur.

Low-level car parking areas, basement or sub-basement plant rooms, staff toilets, etc., may be below the flood level of the public sewer, and their effluents would have to be discharged into a closed-in sump or into a series of closed-in containers whence they would have to be pumped or pneumatically lifted into a higher-level party drain. Special precautions must be taken where the greasy effluents from canteens are concerned, as congealed grease will foul the pipe or the control equipment.

Hydraulic Fire-Fighting Services

The details of the hydraulic fire-fighting services will depend on the requirements

of the local authority and, apart from 'first aid' appliances, are designed to supplement the facilities provided by the local Fire Brigade.

In buildings which exceed in height the level which can be reached by the Fire Brigade's turntables, dry or wet risers must be installed. In London this height is 80 ft. A dry riser is merely a vertical pipe run up the building with an open inlet at street level and an outlet valve on each floor easily accessible from the staircase. In the event of a fire the Fire Brigade would connect their pumps to a street hydrant point and to the dry riser inlet in order to raise the water to a higher level where their hoses can be connected to the staircase outlet valves.

When the height of the building exceeds the level to which the local Fire Brigade can at all times raise a satisfactory volume of water at a suitable pressure, then wet risers must be installed. In London this height is 200 ft. Wet risers are vertical pipe-runs up the building with outlet valves on each floor like the dry risers, but having permanent connections to a reliable water supply instead of open inlet points. The source of this supply will vary with local conditions. Where there are two separate street mains available (two in case one supply should fail), the connections may be made to these.

Where the water supply may be scarce or intermittent, water for fire-fighting purposes would have to be stored in the building. Two sets of automatic booster pumps must be provided to ensure a plentiful supply of water at all levels at a rather high pressure, one set to be powered by electric motors, the other to be a diesel-powered set with battery-operated start as a standby in the event of electrical failure.

Hydraulic hose reels are an efficient and convenient means of fighting small fires. They are always charged with water under pressure which is automatically maintained by booster pumps. The hose end nozzles can be pulled up to 100 ft. to any fire, and a jet of water firing up to 5 gallons per minute can be aimed at the fire. They must be sited in such a way that small fires in any part of the buildings can be tackled.

Automatic sprinklers are normally only provided in very large storage areas, in car parks within buildings because of the danger due to petrol, or in places where highly inflammable goods are stored.

Gas

Gas is one of the services which does not present any additional problems in tall buildings. As 'Town Gas' is lighter than air, it will rise in the pipes when draw-offs are opened, and the frictional losses due to longer pipe runs will be more than offset. Apart from cooking, water, space and central heating, gas is increasingly used as fuel for toilet incinerators in office blocks. The appliances can now be fixed to one common flue having an industrial type extract fan, and are provided with flame and flue failure controls to guard against all eventualities.

Heating and Ventilating

The first problems connected with the heating and ventilating services arise from the fact that in tall buildings, especially those rising above 200 ft., the pressure of the wind on the outside faces and the force of the wind when windows are

opened, produce quite exceptional problems of heating and ventilation. The wind pressure will appreciably change the temperature between the windward and leeward sides of the building. The difficulties of opening windows and securing adequate ventilation, especially when there are high winds, increase very largely the desirability of providing artificial ventilation and almost turn it into a necessity. If the windows of a high building are side-hung, it is almost impossible to prevent times at which all the papers in the room are blown across it without warning, and frequently opening a window will produce these extremely uncomfortable conditions. Attempts to throttle the opening lead to whistling noises.

If artificial ventilation is accepted as a *sine qua non*, the question of accommodation for plant becomes of the greatest importance: the plant for full air-conditioning the building will be expensive and heavy, and because of the need for enclosures for the lift banks and water tanks, it is almost certain to be placed at the top of the building. If this is the case, the engineers must provide for substantial additional loads. In some cases, however, a whole floor is set aside at a lower level to provide accommodation for the plant in such a way that an automatic break in the full water pressure is obtained. As in the case of the plumbing services, the hot water and heating services must have a break in the head of water, and this is normally necessary above 120 ft. The pressure head affects both the boilers and the radiators, and would mean that in each case steel must be substituted for cast iron.

Excessive draught and difficulties of water pressure add importance to the value of a system of artificial ventilation, and as increasing progress is made in connection with high-pressure delivery and its accompanying advantage of smaller ducts and other spaces, the distribution of heat by means of hot air instead of hot water becomes more and more valuable.

If straight heating costs 5*s*. per sq. ft., heating plus ventilation may cost 10*s*. to 15*s*. per sq. ft., and air-conditioning may cost 20*s*. to 25*s*. per sq. ft.

In any case, the substitution of background heating for full heating by means of water, and completing the heating by air, becomes a combination worthy of increasing study. If the whole of the heating plant is situated on the roof, calorifiers or other means of breaking down the pressure will be needed at each 100 ft. level below the top.

In certain cases consideration can be given to boiler houses on the roof. These have other advantages in connection with the saving of space on (possibly extremely valuable) lower floors, but involve fuel raising to high points unless the boilers are to be fed by electricity.

Up to the present, extensive heating by electricity has not shown itself to be possible, as off-peak loads cannot maintain a temperature throughout the day without a substantial day boost or excessive storage, both of which are expensive. If nuclear energy plant produces electricity more cheaply than the comparable rates for gas, oil or solid fuel, it is obvious that it will immediately create a demand for electric heating plants and revolutionize a great deal of the heating problem. In any case, it must be accepted that board-rooms, directors' rooms, laboratories and other special rooms in high buildings almost of necessity demand air-conditioning, and this will include refrigeration. In high buildings, the top floors

facing south and west may well provide working conditions intolerable in the hottest weather, thus adding further weight to the argument in favour of universal artificial ventilation.

The hot water installation will involve much the same problems of the breaking down of pressure as cold water, with special attention to mixing valves to see that the pressures are approximately the same. A certain number of the hot water problems may be solved by attaching localized hot water heating units to the cold water system, thus using gas or electricity in the form of heating units in each lavatory on each floor.

Cooking equipment and the kitchens of all high buildings are at the top, thus eliminating most of the problems of plumbing and hot water heating, as well as eliminating the smells which arise from kitchen and other cooking.

All high buildings require studies of their insulating properties to a much greater extent than is necessary in the case of buildings of moderate height, and this study of insulation is intensified if the building is to be faced with glass aprons, plastic or other thin materials of poor insulating value. As the height increases, double glazing and other similar protection against solar heat and cold become justifiable, and once a complete heating and artificial ventilation scheme has been accepted, saving in running costs resulting from good insulation will be substantial, and may reach 20 to 25 per cent of the total estimated figures. I think it is highly probable that many buildings at present under construction will prove to be unsatisfactorily insulated when they are brought into use. The heat loss on the top floor of one of my own buildings proved to have been calculated to allow for only about half the heat loss which was ultimately experienced in mid-winter.

Much heat is produced by electronic computers, machine accountancy systems and automation generally. These are becoming increasingly common. Air-conditioning can remove such heat and maintain satisfactory atmospheric conditions for work to continue at maximum efficiency.

Skyline

In dealing with the principles of the services and construction of high buildings, I have found it impossible to touch upon the major principles of the introduction of high buildings into London. In the case of New York, the marvellous sky-line seen when approaching from the sea is known all over the world. London has always considered that it does not wish to produce a basic sky-line of high buildings of this character. The arguments for and against may well be extensive.

Planning

There are many problems of planning high buildings and the proper relationship of the high and low portions which are dictated by principles of architectural effect, economics, the proper use of the site and the recognition of the rights of adjoining owners. These in themselves form a major study and would need a full evening for exploration and discussion.

Floor Areas

Arising out of the question of planning, the relationship of the floor area of a

given floor to a high building involves many economic repercussions as well as many matters of prestige. The higher the buildings are carried, the greater the loss of space due to single, double or treble lift banks, the escape staircases and the lavatory areas, compared with the useful spaces. This in turn is complicated by the study of thin offices in England and the thicker ones in America, Canada, Australia and many other countries. These planning problems I have also ignored.

I have briefly surveyed the field. Many here will be able to add knowledge and experience to a subject still having many facets not yet explored.

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DISCUSSION

MR. D. JAMES, A.M.I.C.E. (Wilson, Bole and James): Would Sir Thomas care to comment on the influence of contractors' plant on the design of high buildings?—maybe the grouping of lifts so as to permit the possible use of climbing cranes, or the breaking down of such things as precast concrete units so that they are within the weight/radius of particular types of cranes on the market, etc.?

THE LECTURER: I have attempted to examine that question with some of the leading contractors. The short answer I get, with great confidence, is that climbing cranes and the general use of cranes to-day is so elastic that they can cope with anything I can design. That may be a perfectly true statement or it may be merely an attempt to tell me that that contractor does not worry what I do, so I am a free agent. But, so far as I observe the buildings that go up, I should think that crane design in the last ten years has advanced enormously. I frequently feel it is a matter of regret that some of the cranes are not of British design and manufacture; so many are either French or German or of some other foreign origin. But nevertheless, if the contractor has the money to re-equip himself perhaps constantly with cranes, he does appear to be able to crane the job without undue difficulty. I used to think the steel frame facilitated the climbing of cranes a great deal but, in recent years, reinforced concrete seems to be able, at a very early date, to take a crane at a high level, if it is needed. As far as I can discover, there are no real problems with cranage, apart from the cost of the crane and the difficuly for many contractors of buying new ones every few years in a period when the design of cranes is advancing very much.

So far as other plant is concerned, there are a number of plant items which cause some amount of thought. To begin with a precast one; precast units do appear to me to need special design, which is not always possible. They need a knowledge of the capacity of the precast plant before you start to design a building, and most plants do appear to restrict the designers to a greater extent than the sort of buildings we are talking about justify.

If one is dealing with straightforward factories, or simple offices in factory areas, etc., then the precast unit has a great deal to be said for it. I put up a three- or four-storey building with a precast unit which worked perfectly satisfactorily. There are certain advantages, but not as great as one would think. One does not appear to save as much money as the holders of the precast patents would like you to think, and one has certain limitations. You realize that I have not become particularly enthusiastic about precast units.

Bricks, and their packaging and handling, have advanced enormously in the last few years, thereby saving a lot of work.

So far as concrete is concerned there is more pre-mixing, and the areas of mixing we used to have to set aside in buildings are no longer there, and to that extent there is a great advantage in cleaning up the workable spaces and making them ready for use.

Another one is scaffolding. Some contractors appear to have meagre scaffolds; others seem to leave it up much too long for my liking. I like to get the scaffold down and the tying-in out of the way, the building made water-tight and heated at an earlier date than some contractors manage. I cannot help thinking that it is mainly a question of administration. So far as scaffolding itself is concerned, I think we will have to provide much more protection for workmen in bad weather than we have done up to now.

Those are the principal points of contractors' plant as I meet them as an architect.

MR. E. J. GRIFFIN: I have two questions to ask Sir Thomas. Firstly, when he compared construction in reinforced concrete with that in steelwork he made no mention of light-weight concrete. There is obtainable lightweight concrete which can give the equivalent strength of normal dense concrete with only two-thirds the density. This can represent a saving of up to twenty per cent in the total weight of a building, which in turn represents a saving in the cost of foundations. What are the lecturer's comments on its use please?

Secondly, on the question of plant being situated at the top of a tall building. If we need to take up transformers one-half or one-third the height of the building (this is a problem we have in the office at the moment) then large openings have to be provided for them in the flank walls, along with awkward lifting gear and specially reinforced members to support this gear. Perhaps it is just as well for this sort of equipment to be positioned at the bottom of the building?

THE LECTURER: I have no objection to light-weight concrete at all. The only problem which it gives rise to sometimes is that if you get a lot of water in it, it seems to take an unconscionable time to get it out again; so if you are unfortunate enough to have a heavy deluge while the concrete is exposed, it carries the water far too long and it takes the building a long time to dry out. But apart from that, it is a valuable thing to use, in many cases. I am surprised that you would say it has the same strength as ordinary dense concrete; I did not think it had. If you assure me it has, I think it is a valuable contribution.

As for getting transformers, etc., in and out, any heavy plant is the subject of trouble. If you are putting it in a new building, you can get over it without difficulty, but replacement is a serious trouble unless you have managed to make special provision. That may be a strong reason for not putting transformer plant on the higher floors of a building, but it is a question of study in each case.

MR. F. MOTT (Divisional Officer, London Fire Brigade Headquarters): It is a Fire

Brigade requirement in London that in all buildings over 100 ft. high there should be lobby approach staircases. The lobbies we require to be permanently ventilated to the open air. I wonder if you could tell us how we can achieve this with an air-conditioned building?

THE LECTURER: I do not think there is any difficulty in that. We are familiar with the design of the type of tower staircase you are referring to and the total amount of space it occupies in the building, and the fact that we have to have an additional fireman's lift. But if you have an air-conditioned building, the only thing that the staircase requires is a door that would shut, in the normal working conditions, and can be opened from the outside. The moment you let in a certain amount of air it is damaging but not disastrous. In the normal way, the doors of the staircase would remain shut and would be on normal fire direction gear for opening. Do you see any difficulties about that?

MR. MOTT: I do, Sir. We have been informed that there are difficulties when we have insisted on this open ventilation. There is only the doorway separating the floor area from the lobby, and it is a staircase that is not used frequently; but it can be used, so if there is any frequent opening of the door, would this cause a great loss of heat from the building?

THE LECTURER: There is a certain maintenance problem. One of the plants I put into a building was concerned mainly with reduction of temperature in summer, so every time the door was opened, if the temperature was nearly at the 100° mark and your building was of a standard temperature of 68°, you let in some 100° air. That is a nuisance; it is a maintenance problem but I would expect to find that it is no more than that.

It is open to doubt whether these elaborate requirements are really justified in a modern structure. Practically no other country in the world insists on external staircases, let alone tower staircases, as we do. I think it is our general answer that America and other countries have worse fire disasters than we do and it justifies the means. I showed you on the screen some of the French and German examples, and some Italian and American, and none of them has staircases on the external walls, which is one of the reasons why they have flexibility of planning. We, so far, have insisted on this type of very elaborate staircase. It may be justified, but since no other country in the world seems to justify it, it does look a little as if we ought to have a modified type of detail. It certainly gives us very many headaches at the moment, but we would regard the disability as purely one of meeting the problem and paying the cost, although it should be possible to overcome it. I have got a tower staircase in a fully air-conditioned building, and one just accepted, whatever disability it brings.

MR. J. R. KELL: Sir Thomas mentioned the problems of heating and ventilation in these tall buildings, and has referred to the situation that arises of not being able to open windows. I think what he has in mind is, that in any sort of high wind the opening of a window admits so much air that the papers blow all over the place and so the occupant of the office then thinks he will shut it, leaving it a crack open to reduce the gale, only to find that there is a terrific whistling noise set up; and, in desperation, he has to shut it altogether.

He has also referred to the greater use of mechanical accounting machines, computers, etc., giving off heat, and there are other effects he did not mention. There is the effect of the sun shifting round from one side of the building to another during the day, and heating up rooms on the sunny side, whereas those on the other side are not heated up. Furthermore, there is the chimney effect of the building: opening the windows and admitting air at the top, and drawing in air at the base.

One does come to look at the whole problem in the way that I think it probably

has been looked at in the hotter countries where this kind of building has been going ahead in advance of what has been happening here, and where architects have come to regard air-conditioning as the only answer. Here we are not faced with summer temperatures high enough, as a rule, to justify air-conditioning, but I believe that the future of these buildings, taking all these factors into account, will turn in that direction in due course. I should like to know whether Sir Thomas thinks that kind of development is likely to come?

THE LECTURER: There is no doubt about the tendency at all. Quite apart from the height of the building, many firms are realizing that, for crowded conditions like those in board rooms, and for good working conditions all the year round in rooms of an expensive nature like directors' rooms—certainly on high buildings, where the opening of windows is a very serious matter—they must, more and more, have air-conditioning, or at least artificial ventilation. I do not think there is any question at all that it will become an increasing factor.

The great point about it in England is the question of cost. In countries where it is essential, it becomes standard. In countries like England where it is a semi-luxury, it costs roughly half-a-crown per square foot of space more than no air-conditioning, and a half-a-crown increase multiplied over a large office area does quite a bit to the rent. A few years ago, very few people would have a room in which they could not open the window; with the improvement of air-conditioning and the acceptance of it and, indeed, familiarity with it, more and more people are perfectly happy in an air-conditioned room without opening a window. If you go to Lennans in Brisbane, or any other artificially ventilated hotel on the Continent, you realize if you open a window that the heat is too much; and if you go to a cold country, it is equally serious. So I think we are getting used to the fact that we get better conditions with artificial ventilation, and the prejudice will disappear. A number of factors are leading to greater consideration of artificial ventilation.

MR. ROBIN HOPE (Henry Hope & Sons Ltd.): I should be interested to know what Sir Thomas has to say on a matter connected with what has just been discussed: the question of cleaning the glass on the outside of tall buildings. Does he favour the form of window which enables the whole of the outside of the glass to be cleaned from the inside, and what does he think about cleaning the outside by some method of hanging gantry, on buildings with or without air-conditioning?

THE LECTURER: I am glad Mr. Hope has raised this question, because it is a serious one. We can, first of all, most easily clean windows by having the type which will turn inside out. If you have 100 per cent opening, you have no more worries. If you have something less than that, you can still arrange it so that there is no difficulty, with the possible exception of windows on staircases, where we find that window cleaners strongly object to standing on sloping stairs and leaning over handrails. Even with the greatest amount of skill in designing the open portion, therefore, in some parts of some buildings you are driven to gantry cleaning of some kind. You can fix boats on the top of the roofs with something like a ship's davit; in some American and other buildings, one gets guides and rests going down the building from top to bottom which hold the boat reasonably safe in wind, and window-cleaners appear to like working in a boat. I have only stood in a boat a few times and I hate them; they feel as if they will tip up. Window-cleaners like them, so the boat method is a possibility.

I spent a lot of time a few years ago trying to find a firm who could build an automatic window-cleaner. I very nearly reached the point at which a spring-loaded brush could be obtained which would dip itself in a detergent at the top and, worked by a motor, would run down the whole height of the building, turning round and cleaning the glass. When you got to the bottom, you got a clean water tank and ran up

and down with clean water, so all you had to do was press a button. Unfortunately, by that time, the building was finished and my client would not pay for it.

MR. C. S. WEILDING: When fuel oil fired boilers are installed in the basements of high buildings, what are the proposals to avoid the occurrence of emission of acidic smuts? I understand that in some cases there is a proposal to install a 'booster' fan at the top of the building to disperse them. This system of course only shifts the problem elsewhere.

THE LECTURER: There should be something put in the flue to get rid of the smuts.

MR. WEILDING: It would appear then that there is no known cure for this problem. I think, therefore, that the principle of putting boilerhouses on the roof is good. Have you any objection to this principle?

THE LECTURER: I have not yet put a really big boilerhouse on the roof. If the boiler is up there and it is fed with oil, and the oil is at the bottom, the pump has the very big duty of keeping the boiler supplied. Perhaps wrongly, I feel instinctively a little nervous of putting a lot of fuel oil on the top of a building. I know that, in most cases, it is difficult to ignite it, and it may even be, if it broke loose in a fire, it would not be very serious, or not as serious as I think. But, nevertheless, I do think there is an objection to storing large quantities of oil in the roof, and I think there is certainly danger that, however good alternative pumps may be, you might, at a crucial moment, find that your bottom pumps were not supplying your plant with oil.

You clearly cannot put a solid fuel boilerhouse on the roof. As for putting gas plant on the roof, I have a large building in which there are three gas boilerhouses, and the owners of that building consider that, in spite of the high cost of gas, it is much the most efficient and, they think, the best method of heating a building. It is a really large office building, and it is the head office of one of the biggest companies in the country. There, gas appears to be a thoroughly good fuel. These boilers are, however, in the basement. I see no difficulty in feeding gas to the roof. Normally, gas plant is not subject to as much interruption as other plants.

If we come to electric plants—and I forgot to mention this—then we begin to have a very different story altogether. Up till now, we have no very satisfactory methods of storing electricity for off-peak loads. Heat tends to run out at one o'clock in the afternoon, or something, and therefore needs a day boost, and if you pay for a day boost of any magnitude, then electricity is too expensive. Whether you store it in the building with wires in the floor or store it in some kind of storage arrangement in water or oil, electricity is still very expensive.

If atomic energy reduces the price of electricity, I expect to find that it will possibly become our only fuel, or (certainly for large numbers of buildings) much the best and easiest to use; and if we still have to have boiler plant for it, we may possibly put that on the roof merely because we have so many uses for the ground floors and basements of buildings in crowded areas that any method of disposing of boiler plant is useful.

Somebody else raised the problem of putting in heavy plant and being able to get it out again without undue difficulty. Up to the present, so far as access to the boilerhouse from the street is concerned, this is obviously easier when it is in the basement than when it is on the roof; and indeed, if you have to renew plant in 25 years, to get it down from, or up to, the roof is a major problem. So up to the present, I have not felt justified in putting the real boilerhouse on the roof. There are conditions in which I think it would be favourable and possible and I certainly think, when we get electricity as fuel which is a practical proposition from the point of view of cost, we shall have to do a lot of fresh thinking about the placing of boilers, or the source of heat, whatever it is.

THE CHAIRMAN: I think you will join with me in a very sincere tribute to Sir

Thomas for his extremely interesting address tonight. I told you quite frankly, when I was introducing him, that the sum total of my knowledge of the subject was nil, and therefore I should like, by that token, to pay a tribute to Sir Thomas for the brilliant clarity and fluency of his lecture, which I as a novice was absolutely fascinated by. I should also like to pay an equally sincere tribute to all of you for being experts in such a complex subject.

The vote of thanks to the Lecturer was carried with acclamation.

MR. E. C. STEVENS (Institution of Plant Engineers): It is my great pleasure to thank Lord John Hope on your behalf for so kindly presiding over our meeting tonight. As the Minister of Works, he is an extremely busy man and has many important commitments. We are therefore especially honoured that he should give so much of his time to us on this occasion. Tall buildings are going up all around us, and it is clear that it is a matter in which he is concerned, and one in which he has, by coming here, shown a personal interest. His presence with us has greatly enhanced a very memorable occasion and I would ask you to join with me in showing our thanks to him.

The vote of thanks to the Chairman was carried with acclamation.

I should not like to let this opportunity go by without mentioning on behalf of the Institution of Plant Engineers our very sincere thanks to the Royal Society of Arts, not only for this most enjoyable evening but also for the very kind help and assistance which has been given to our Institution in the past 14 years. It is always rather difficult for a young Institution like ours to find meeting places which are in keeping with our high aims and ideals, and so it was a very happy day when we were offered the use of these premises for our meetings. Since that day, I understand that the London Branch have held over 100 meetings here.

We appreciate especially the kindly advice and the wisdom and experience which has always been so freely given to us. A relationship has grown up which we value very highly indeed, and I hope that, in the years to come, it will grow and flourish.

MR. OSWALD P. MILNE (Chairman of Council of the Society): Such kind things have been said about the Society by Mr. Stevens that perhaps I may just say a word.

This Society is very fortunate in possessing this delightful building, which was built nearly 200 years ago by the great architect, Robert Adam, for our special use. The builders of that day did not have the complicated problems that Sir Thomas has described tonight, but they did these things superbly well, and it is remarkable not only that this building has withstood the efforts of Hitler to blow it down but that we find to-day that it is almost as convenient and excellent for our purpose as it was in the day when it was originally built.

Having such a building, we are delighted to be able to offer it for the use of other societies that make the kind of admirable use of it that we have seen to-night.

The proceedings then concluded.

GENERAL NOTES

INTERNATIONAL CARPET DESIGN COMPETITION

To mark the occasion of the opening of their new Administration Block in 1962, Carpet Trades Limited of Kidderminster are holding an International Carpet Design Competition, and now invite entries from architects, industrial artists, painters and students. Prizes are offered for three classes of design, viz., a Wilton design, a spool Axminster design, and a 'design for modern living'; in each case there will be three awards, of £400, £100 and £50 respectively.

The competition is open to all designers, under regulations approved by the

Council of Industrial Design and the Society of Industrial Artists. Competitors are limited to two entries in each of the stated classes and they must not submit designs that have been previously reproduced, sold or entered in any other competition.

The judges of the competition will be Lord Bossom, Sir Ernest Goodale, Mr. Paul Reilly (Director of the Council of Indnstrial Design), Mrs. Marian Russell, Mr. Neville Ward and Miss Anna Zinkeisen.

The closing date for the receipt of entries is 30th September, 1961. Full details and entry forms should be obtained from Carpet Trades Limited, P.O. Box No. 5, Mill Street, Kidderminster.

STUDENTSHIP FOR RESEARCH INTO TRANSPORT

Applications are once again invited for a Rees Jeffreys Studentship for research into the economics of Transport, tenable at the London School of Economics from October, 1961, for at least one whole year full-time. The studentship is open to university graduates or any person who is or has been engaged in the administration of transport, including road transport, or in the production of transport equipment or facilities. The annual value of the grant (which may be renewed for a second year) is £500.

Full particulars and application forms should be obtained from the Registrar, The London School of Economics and Political Science, Houghton Street, Aldwych, W.C.2. The closing date for the receipt of applications is 30th June, 1961.

THE PETER FLOUD MEMORIAL PRIZE, 1961

There has recently been established, by public subscription, a Fund in memory of Peter Castle Floud (*ob.* January, 1960) which is used to encourage critical study of the life, work and influence of William Morris—an object with which Mr. Floud himself was closely concerned, especially through his work at the Victoria and Albert Museum. The William Morris Society, which manages the Fund, now announces the offer of a Peter Floud Memorial Prize, of £50, for an essay on some subject concerning Morris. It is stipulated that every essay submitted shall be the author's original and unpublished work, and that no essay for which a prize has already been awarded can be admitted to the present competition. Although no limitation is imposed, it is suggested that the length of an acceptable essay might be between 7,000 and 10,000 words.

Those who would like to compete for this prize should first obtain a full statement of the conditions governing its award from the Honorary Secretary of the William Morris Society at 260 Sandycombe Road, Kew, Surrey. The competition will close on 30th June, 1961, and the result will be announced in the following October.

TREASURES OF TRINITY COLLEGE, DUBLIN

On 11th January, at the Royal Academy, the Earl of Crawford opened an exhibition of early Celtic illuminated manuscripts and other treasures from Trinity College, Dublin, which is being presented by the College until 5th March in aid of its Library extension appeal.

The place of honour in the exhibition is given to one of the Latin Gospels (St. Matthew's) contained in the celebrated *Book of Kells*, which was written and illuminated in the eighth and ninth centuries by a team of artists working probably at the Monastery of Kells in Co. Meath, then the headquarters of the Columban community. This splendid volume (of which different pages will be shown during the course of the exhibition) has never before left Ireland. At Burlington House it is shown side by side with *The Lindisfarne Gospels*, dating from the late seventh

century, and lent for the occasion by the Trustees of the British Museum: an arrangement providing the first opportunity ever to arise of comparing these two great works of Christian art together. Nearby in the same gallery are displayed other illuminated Gospels of marvellous rarity—*The Book of Durrow*, *The Book of Dimma*, and *The Book of Armagh*. Around them on the walls are hung enlarged photographs of pages from *The Book of Kells*, early Irish work in metal and stone, and views of Irish scenery.

This imaginative presentation characterizes the whole exhibition, which also includes manuscripts of later date and holograph letters by famous sons of Trinity College, an assembly of busts from the Long Room of the College Library—amongst them a particularly fine posthumous likeness of Swift by Roubiliac—and a selection of sacred and secular plate. One of the paintings on view is a portrait of Edmund Burke, attributed to James Barry.

INTERNATIONAL EXHIBITION OF MODERN JEWELLERY, 1890-1960

It is announced that the world's first major international exhibition of modern jewellery will be held in October and November of this year at Goldsmiths' Hall in London. The theme will be the evolution of twentieth-century jewellery design, and the purpose of the exhibition is to stimulate public interest in jewellery as an art and to encourage British designers in this field. Pieces representing significant stylistic trends are being borrowed from some twenty different countries, and the display will include works by such masters of the Art Nouveau period as Lalique, Jensen, Tiffany and Fabergé. The main emphasis, however, will be on jewels of the present day, some of them especially commissioned for the occasion by the Worshipful Company of Goldsmiths, which is organizing this venture in association with the Victoria and Albert Museum.

STUDIES IN THE SOCIETY'S ARCHIVES XVII

AN ADDRESS FROM THE SOCIETY TO KING GEORGE III: PRESENTED 3RD FEBRUARY, 1761

For commemorating the history of the monarchy, the year 1960 was important not only as the tercentenary of the Restoration of King Charles II but also as the bicentenary of the accession of King George III. In 1660 there existed no English learned society to express its loyalty to the King. In 1760 there were three, and they all presented congratulatory addresses to their new sovereign.

Soon after his accession on 25th October, 1760, King George began to receive addresses from corporate bodies of all kinds, in all parts of his kingdoms.[1] The Royal Society, referring to the King's 'remarkable love of science in general . . .', presented its address in November.[2] The Society of Arts, like the Society of Antiquaries, which claimed that many of its members had 'contributed to the honour of Your Majesty's native country, in examining the Records of its Antiquities, and clearing the Evidences of its History',[3] waited until February, 1761, before approaching the King.

On 21st January, 1761, the Society of Arts 'Resolved unanimously, That an humble Address be presented to His Majesty'.[4] A special committee was appointed to draw up the address and a draft was duly submitted to an extraordinary general meeting of the Society on the 26th.[5] After some slight amendments had been made, the following text was approved:[6]

> *To the King's most Excellent Majesty,*
> *The humble Address of the President, Vice-Presidents and Members of the Society in London for the Encouragement of Arts, Manufactures and Commerce.*

An engraving of Allan Ramsay's portrait of George III, made by Wm. Wynne Ryland in 1769, and used by the Society of Arts to test the suitability of English papers for receiving copper-plate impressions. (Several fine impressions of this engraving remain in the Society's keeping.)

MAY IT PLEASE YOUR MAJESTY,

We your Majesty's most Dutiful and Loyal Subjects the President, Vice-presidents and Members of the Society for the Encouragement of Arts, Manufactures and Commerce, moved with a deep Sense of Gratitude for the many Blessings we enjoyed under the Government of our late most gracious Sovereign, beg Leave to condole with Your Majesty on the Loss of a Life so valuable and important; and, at the same Time, to offer our Congratulations upon Your happy Accession to the Throne of these Kingdoms.

We feel, Sir, in common with all our Fellow Subjects, the highest Satisfaction from those gracious Declarations so early made, of Your Majesty's tender and paternal care for our Civil and Religious Liberties; and in particular as a Society for the Encouragement of Arts, Manufactures and Commerce are we emboldened to

Address a Prince distinguished for his avowed attention to all these great and national Interests.

The Objects our Society have in View are, the Improvements of Agriculture, Manufactures, and Commerce with their Assistant Arts, throughout Your Majesty's British Dominions and Colonies; as well as to give every Encouragement here at Home to those politer Arts of Painting, Sculpture and Architecture that embellish human Life and distinguish learned and polished from ignorant and barbarous Nations.

In the Prosecution of these Designs we shall proceed with all Diligence and Vigour animated with the pleasing Hopes that we are usefully employed for the Advantage and Honour of our Country and rendering acceptable Service to our Sovereign, who makes His Happiness to consist in the Prosperity of His People.

May your Majesty live long to enjoy, by the Blessing of Providence, so noble a Satisfaction.

By the unanimous Resolution of the Society,
Folkestone, President.

At the meeting on 26th January it was also agreed that the address should be signed by the President, Lord Folkestone, and that it should 'be carried up to His Majesty by the President and Vice-President only'.[7] The *London Gazette* confirms that on 3rd February, 1761, the presentation of the address took place at St. James's Palace[8] and that, as Lord Folkestone afterwards informed the Society, 'His Majesty was pleased to receive it very graciously'.[9]

D. G. C. A.

1. See *Calendar of Home Office Papers*, 1760-65 (London, 1878), and the contemporary issues of the *London Gazette*, the *London Magazine*, and the *Gentleman's Magazine*.
2. C. R. Weld, *History of the Royal Society* (London, 1848), Vol. II, pp. 19-21.
3. J. Evans, *History of the Society of Antiquaries* (Oxford, 1956), p. 130.
4. R.S.A., Society Minutes (hereafter Soc. Min.), 21st Jan., 1761.
5. R.S.A., Minutes of Committees, Miscellaneous Matters (hereafter Min. Comm. Misc.), 23rd Jan., 1761; Soc. Min., 26th Jan., 1761.
6. Min. Comm. Misc., 26th Jan., 1761. The punctuation is that used in the *London Gazette*, 31st Jan. to 3rd Feb., 1761.
7. These resolutions were confirmed on 28th January, when a motion to leave out the sentence, 'May your Majesty live long to enjoy' etc., was defeated by 75 votes to 60. (Soc. Min., 28th Jan., 1761.)
8. *London Gazette*, loc. cit. On the same day addresses were received from the Society of Antiquaries, the Roman Catholic Noblemen and Gentlemen of the Counties of Meath and Westmeath, the Bishop and Clergy of Man, the House of Keys, the Mayor and Burgesses of St. Ives, the Nobility and Gentry of Montgomery, and the Magistrates of Lauder.
9. Soc. Min., 4th Feb., 1761.

OBITUARY

DR. C. J. T. CRONSHAW

Dr. Cecil John Turrell Cronshaw, D.Sc., F.I.C., F.R.S.E., who died on 5th January, aged 71, was a leading figure in the organic chemicals industry, and formerly Deputy Chairman of British Nylon Spinners Ltd., and a Director of Imperial Chemical Industries Ltd.

He graduated with first class honours in pure chemistry at the University of Manchester in 1914, and then worked as a research chemist in London, being one of the first to make synthetic rubber. In 1916 he was appointed to take charge of the Ellesmere Port indigo factory, which had been sabotaged by its former German

owners and staff, and showed remarkable powers of organization in the speed with which he overcame technical problems and brought the works to the point of resumed production. In the following year he went to America and successfully negotiated an exchange of technical information with E. I. Du Pont de Nemours and Co. After the Armistice he became Chemical Controller of the factories in the British-occupied area of the Rhineland.

Cronshaw's scientific experience and capacity marked him out for major responsibilities in time of peace. When the British Dyestuffs Corporation was formed in 1919, he was appointed Chief Administrative Assistant to the Managing Director. In the busy and productive years that followed he became Technical Manager of the Corporation, and after its amalgamation with Imperial Chemical Industries, rose to be Managing Director of the I.C.I. Dyestuffs Group. During the 1930s he also undertook other important administrative duties in connection with the manufacture of pharmaceuticals and general chemicals by I.C.I. He was President of the Society of Dyers and Colourists from 1939-46, and of the British Colour Council from 1945-53. He served as Prime Warden of the Worshipful Company of Dyers in 1949-50.

Dr. Cronshaw was elected a Fellow of the Society in 1937. In December, 1939, he contributed to its proceedings a paper on 'Textile Agents' for which he was subsequently awarded a silver medal.

MR. SHAW DESMOND

Mr. Shaw Desmond, the author and journalist, died on 23rd December, aged 83. Born in Ireland of Anglo-Irish parentage, he began to earn his own living at the age of 15, and had had a variety of experience—business, farming, politics, lecturing, travel—before turning seriously to writing. His first major work, *The Soul of Denmark* (English version, 1918), reflected his great affection for that country. There followed *Democracy* (1919), a novel, *Passion* (1920), and *Labour—The Giant with the Feet of Clay* (1921), an indictment of the Labour Party in which he jettisoned some of his earlier views on the Socialist movement.

During the 1920s and 1930s he exercised his versatile powers in several different literary forms. Apart from his novels, it may be permissible to single out two works in particular as reflecting fundamental aspects of his temperament and beliefs. First, the two volumes *Windjammer* (1932) and *African Log* (1935), in which were recorded respectively his adventures whilst sailing round Cape Horn and on a 7,000-mile journey through Africa; secondly, *We Do Not Die*, a testament to his conviction of survival beyond the grave, published in 1934. In the same year he founded the International Institute for Psychical Research. Desmond's psychic experiences furnished several more books, and in his later years he also developed in stature as a novelist, particularly with *Paradise Row* (1946) and *Irish Moon* (1953). Although an assiduous writer, his habits were by no means sedentary; he was a life-long practitioner of physical discipline, and took vigorous exercise almost until the end.

In 1930, the year of his election as a Fellow, Desmond read a paper to the Society on 'The Novel—what it is, and what it is not'—a forceful exposition of his creed.

CAPTAIN W. M. HUTCHISON

Captain William Millar Hutchison, C.B.E., who was for fifteen years chief marine superintendent of the B.P. Tanker Co., died on 20th September. He entered the company's service as second officer in 1919, and assumed his first command afloat in 1928. He came ashore to take up the appointment of assistant marine superintendent in 1936, and succeeded to the full responsibility in this sphere seven years later. Among Captain Hutchison's major preoccupations in the post-war years were the planning and development of oil harbours for the company, notably those at the Isle of Grain, Finnart, Little Aden and Kwinana. He was appointed C.B.E. in 1956.

Captain Hutchison was the compiler of a manual widely used in his profession, *World-Wide Marine Distance Tables*. After his retirement in 1958 he took up a business appointment. He was a Warden of the Honourable Company of Master Mariners, and had been elected a Freeman of the City of London in 1951. He became a Fellow of this Society in 1953.

MR. WALTER DORWIN TEAGUE

Mr. Peter Müller-Munk, F.A.S.I.D., writes:

As one of Walter Dorwin Teague's 'junior' colleagues, I should like to add a little extra garland of admiration and friendship to the obituary by Sir Gordon Russell in the January issue of the *Journal*.

In an age in which he fought to establish the principles of order and of beauty in the products of its industries, Walter Dorwin Teague remained one of the least standardized and most incorruptible of individuals. His personality—Walter Dorwin Teague the man—was his own best design.

He was all of one piece—forthright, self-assured, intuitively kind and marvellously eloquent with both the spoken and written word. The graceful and informative elegance of his many articles, reports and speeches had a finish extremely rare in a profession not noted for its literary precision. Beyond his public statements, however, Walter was one of the most delightful and generous of correspondents, who never failed to illuminate even the most arid topic with a felicitous twist of humour, or to deliver the *coup de grâce* to what he considered a youthful error of judgement. When properly aroused, and this was not infrequent, he could let himself go for pages, but by the time one reached his wonderfully bold and characteristic signature—the subject had been dealt with for keeps.

His range of interests was immense yet never superficial. Next to his family, his profession, his offices, and his clients, his love affair with Italy deserves almost a special chapter. Nobody within memory repaid Columbus as enthusiastically as did Walter Teague. He did not just discover Italy, he adopted it—its culture, its design, its artifacts—and like everything else that he involved himself with, he remained forever loyal to his passion.

Walter was that rare specimen, a truly cosmopolitan American—as much at home on his farm or on Madison Avenue as he was in Athens, London or Geneva. He was a formidable fighter for principle and for what he believed right. A bit of a tyrant, maybe, and I doubt if he ever really understood the function of committees. Best of all, however, his capacity for friendship was inexhaustible.

He was, of course, an absolute genius at organization and if of late I have been inclined to fret about the brand of justice meted out from heaven—my concerns, unhappily, have now been put to rest. With Walter Dorwin Teague up there among his celestial peers things will be put to rights in short order—of that we can be sure.

NOTES ON BOOKS

CATALOGUE OF THE CONSTABLE COLLECTION IN THE VICTORIA AND ALBERT MUSEUM. *By Graham Reynolds. London, H.M. Stationery Office*, 1960. £6 6*s*

With the publication of this volume Constable becomes one of the most fully documented of English artists. Finberg's great catalogue of Turner's sketches represents a labour on a far greater scale than that which has fallen to Mr. Reynolds, but it lacks the corpus of reproductions that is here so liberally provided. The Victoria and Albert Museum possesses, it is true, few of Constable's great finished compositions, where the immediacy of his response is disciplined into a more conventional form of picture making, but its unique collection of sketches provides a most direct insight

into his creative process. From 1811 until his death in 1837, every year is represented by a group of studies with the exception of 1825, for which there is only one securely dated item; but that item is the full-scale sketch for *The Leaping Horse*, one of his most revealing masterpieces. Mr. Reynolds has used this material to trace out in a chronological catalogue the methods by which Constable, with infinite concentration and perseverance, developed his rendering of the landscape of Suffolk. With all his often stated emphasis on direct observation, he was, as is clearly borne out by various references here, deeply aware of the Claudian tradition of classical landscape, and this permanently affected the balanced structure of his finished exhibition pieces; but in the sketches he recorded his immediate impressions of the constantly changing light and shade of the countryside. The wonderful sketch of *Flatford Mill from a lock on the Stour*, though generally assigned to 1811, is unfortunately not dated, and Mr. Reynolds will not commit himself beyond '*c.* 1810-15', but it stands out as the moment in which Constable finds his own form of communication. From then onwards, until the astonishing late sepia sketches (Nos. 410 and 411 in this catalogue), he was continuously experimenting with the sense of movement, the fleetingness of English atmosphere. The finished renderings have an authority that comes from their longer pondering and have permanently influenced renderings of English landscape, with the inevitable degeneration of lesser hands using a convention. The sketches provide a visual analysis which is never likely to be superseded, and which will always instruct us in the process of seeing.

Mr. Reynolds refers to three 'apocryphal works' which were included in the catalogues of 1927, but which he now rejects, and which 'are not noticed further in the present Catalogue'. It would have been of some interest to have had his comments upon them. Within a short period after Constable's death paintings by other hands, whether *bona fide* works of friends or assistants who had learnt from him, or actual 'fake' products, were in circulation as genuine Constables, and have caused an embarrassing confusion that still exists. The late Sydney Key made many investigations into this problem, but only a comparatively brief summary of them appears in his volume (1948) in the British Painters Series. Any guidance here is of great interest and value, and Mr. Reynolds could certainly provide it; but no doubt many delicate questions are involved, which could hardly be suitably propounded in a Gallery catalogue. All problems, however, of dating and subject will be immensely assisted by the apparatus here provided, and the careful recording of all inscriptions on the frames and backs is in particular something for which to be grateful. Out of the approximately 600 items, 597 are reproduced.

T. S. R. BOASE

LOOKING AT PICTURES. *By Kenneth Clark. London, John Murray*, 1960. 37*s* 6*d net*

One of the dangers of the now widely-grasped concept of the Imaginary Museum is that it may lead to an under-valuation, not so much of the real museum and the real art gallery, as of the physical actuality of the objects that these preserve. This is a danger inherent too in the present prolific outburst of art-historical works, excellent though many of them are; these concentrate of necessity on individual works more as phases in an endless process than on themselves as finite objects. The discussion of sources, of influences, of one thing leading to another, often leaves in art-historical discussion an impression that any single work is more like others to which it relates, than it is different from them: its unique quality is diminished. Any serious work that advocates a firm stop in front of a single work of art, to give it time to work, must be welcome.

It would be presumptuous to introduce the author of this work either as art-historian or as pleader of art. In the latter capacity he has the widest audience probably that any serious advocate of art has ever won. In both capacities, his position on the heights owes much to a most remarkable literary skill in a prose, the powers of

evocation of which are matched by its fastidiousness; in this new book all his known qualities are displayed.

It consists of sixteen discussions of as many masterpieces in painting, all (except one) originally written for the *Sunday Times*; it is illustrated generously by reproductions themselves of exceptional quality. The sixteen artists represented are Titian, Velasquez, van der Weyden, Delacroix, Raphael, Watteau, El Greco, Vermeer, Constable, Goya, Seurat, Turner, da Vinci, Courbet, Botticelli, and Rembrandt. The choice, as the author makes clear in his introduction, is personal; he also accounts there for some of the more striking omissions, and explains his method, which is, broadly, to describe the experiencing of the painting in terms of a pattern of 'impact, scrutiny, recollection and renewal'. Each essay is in fact the distillation of many years' knowledge of its subject, and it may be that in choosing to use the present tense throughout, when describing his reactions, the author has erred in judgement. It gives an unnecessarily stagey effect ('With these speculations in mind I return to the *Meniñas* . . .'), and unduly emphasizes the author's self-consciousness; thus at times the reader may feel that he is watching Sir Kenneth watch Sir Kenneth watch pictures. A slight aloofness is sensible, a hint of veil before the picture itself.

As usual, his range is formidable. His is the richest sounding board, so to speak, in the business. Thus a Botticelli may, unexpectedly but quite justly in context, evoke echoes of Wordsworth on the Intimations of Immortality (rather oddly printed though). While the width of his knowledge never leads him to condescension, there is an occasional uncertainty as to his audience, a sort of shying in front of the obvious, that can lead even to an untruth. It is for instance not true to say, when one thinks of all the people one hopes will read this book, that 'Everyone knows that Tintoretto wrote on his studio walls "the drawing of Michelangelo and the colour of Titian" '.

These are, however, mere quibbles that do not begin to disturb the overall success of the book. It will not only help countless amateurs of picture-looking to get far more out of paintings, but should also cause many specialists to wonder if they have not been missing something.

DAVID PIPER

CANALETTO AND HIS CONTEMPORARIES. *By Decio Gioseffi. London, Batsford,* 1960, 63*s net*

The prominence given to Canaletto's name in the title of this book calls for some explanation, for Canaletto and his fellow view-painters occupy little more than a single chapter in a book which is in fact a history of Venetian painting as a whole during the eighteenth century. Last year, however, Dr. Gioseffi published a small, intensely interesting but highly specialized monograph on Canaletto's use of the *camera obscura*, the scientific instrument he is known to have employed to assist him in drawing the complex perspectives of Venetian architecture which are the staple of his painting. In a series of experiments carried out at the University of Trieste he was able to show not only how Canaletto used this scientific instrument (something so alien to nineteenth-century taste that it had been totally forgotten) but also to demonstrate pretty conclusively that a whole group of the artist's surviving drawings were produced in this way.

Naturally, therefore, informed readers of the book will turn first to the chapter on Canaletto. They will not be disappointed for, in addition to dwelling on these technical matters, it contains an admirably succinct account of the latest researches on those view-painters who have made the appearance of eighteenth-century Venice familiar to thousands and whose present popularity causes them to bulk so largely in most art-lovers' conception of eighteenth-century Venetian painting. In the eyes of their own contemporaries, however, these *vedute* painters were of minimal importance. Both Canaletto and Guardi found very great difficulty in obtaining election to the Venetian Academy. This was because the type of painting they practised was then

held to be the lowest in the hierarchy of the arts, ranking far below history painting and of lesser importance than portraiture, or even genre painting and still life.

Consequently and rightly the greater number of the artists Dr. Gioseffi deals with in his carefully planned chapters—the Tiepolos, the Riccis, Amigoni, Pittoni and Piazzetta—were history painters. Of the other categories, portraiture and genre are represented by chapters on Rosalba and the two Longhis, pure landscape by Marco Ricci, Zuccarelli and Zais, and every category of painting comes into the chapter (a particularly illuminating one) on the chameleon-like Guardi family, for it is not always remembered that Francesco, the best known of them all, only took up view-painting when he was past middle age. Up until then he had been a mere assistant in his elder brother's workshop engaged principally in the production of cult paintings and copies after other masters.

In dealing with these artists Dr. Gioseffi shows he is anything but a narrow specialist in view-painting. He is absolutely up-to-date with the results of the latest research in the whole field (his succinct footnotes are packed with stimulating comments on the current literature of the subject). Even where one may differ with him in matters of detail (about the dating of Mr. Peter Jones's *Bull Fight in the Piazza*, for instance) his judgements are always perceptive. Each chapter is prefaced by a brief critical commentary on the artist concerned and this is followed by a summary of the known biographical facts, after which the author discusses the illustrations in detail. Altogether his text is admirably planned, highly intelligent, precise and informative. It can be strongly recommended as one of the best brief surveys of the history of Venetian *settecento* painting available.

Unfortunately the author has been very ill-served by his publishers. Although they assert on the dust jacket that the book's 'great distinction . . . is that all of the 60 or so illustrations . . . are reproduced in full colour', a more dreadful series of travesties of the originals than most of the plates could hardly be imagined. Worse still, the book production is extremely slovenly. Little or no attempt seems to have been made at proof-reading (proper names are spelt in different ways on the same page) and the translation (made, it seems, from a French rendering and not the original Italian) was apparently done by someone totally unfamiliar with the subject-matter (*eaux-fortes* or *aquaforti* translated as 'water-colours' is one of the least ridiculous amongst a veritable host of misunderstandings). It is a great pity that a distinguished Italian scholar's text should be so maltreated by an English publisher specializing in the production of art books.

F. J. B. WATSON

A LITERARY HISTORY OF WALLPAPER, *By E. A. Entwisle. London, Batsford*, 1960. 75*s net*

'And now, my dear boy', said the Dean, by way of peroration, 'you cannot but understand that it is your bounden duty to apply yourself to some serious purpose in life.' 'I do', said Doggie, 'I've been thinking over it for a long time. I'm going to gather material for a history of wallpaper.' (W. J. Locke, *The Rough Road*, 1918.)

This latest book by Mr. Entwisle represents fifteen years of such collecting, and the above quotation is one of the 600-odd references published in it relating to wallpaper from 1509 to the present day. As the author admits in his preface, the book does not pretend to be a definitive bibliography of references to wallpaper but it does provide a basis for serious study, particularly as there is a detailed and extensive index. Many of the entries contain brief quotations from the work cited which serve to whet the appetite for further reading. Such tantalizing items as an article (*not* quoted) in the *Penny Magazine* for 1840 on 'intellectual' wallpapers seem to invite the reader to pursue the matter for himself. The items are indeed extraordinarily varied, too varied perhaps to constitute an integrated whole, but while this may lessen the

book's value to the scholar, it makes for more fascinating reading for the layman. The references range from such prosaic sources as Parliamentary Acts imposing excise duties on wallpaper to lyrical descriptions of particular wallpapers gleaned from the works of Flaubert, Maupassant and Dostoevsky. I have often suspected that wallpaper makes more impact on us than any other aspect of interior decoration. Mr. Entwisle's book seems to confirm this impression; there seems to be hardly any book of reminiscences that does not refer to some wallpaper nostalgically remembered from a distant childhood.

A number of the most interesting quotations concern conditions in the paper-staining industry in the nineteenth century. For example, C. T. Thackrah's *Effects of Arts, Trades, on the Health* (1832) tells of the ill-effects of arsenic and white lead on the workers in the industry and the damage to eyesight from particles of flock and other matter. 'Dimness of sight', he concludes, 'incapacitates most men before the age of 50. The men are not addicted to liquor. Indeed the nicety of hand and eye required . . . precludes intemperance.' It is interesting to note that concern over public health in the second half of the nineteenth century, which culminated in the International Health Exhibition of 1884, led to most of the leading manufacturers advertising their wallpapers as being 'free from arsenic'.

While a great deal of the book is of immense documentary value, there are a number of quotations from secondary sources which might well have been omitted, such as G. M. Young's references to wallpapers in his *Early Victorian England*. Nor do references to wallpaper in an historical novel set in the year 1816, but written in 1946, add much to a serious history of the subject.

The book also suffers from the fact that there is a lack of uniformity in the way the references are set down. Some references are inadequately documented; on the other hand, some references even include the British Museum Library press mark. It is rather as if the author had published his own personal card index without recasting the individual items.

Although it is difficult to see what other method could have been adopted, the references are arranged according to the date of publication. Consequently, we are presented with a mixture of contemporary comment and works referring to wall-papers of previous centuries. This method tends to detract from the value of the work as a continuous, chronological history of the subject, although in many cases the quotations are cross-referenced.

BARBARA MORRIS

VICTORIANA: A COLLECTOR'S GUIDE. *By Violet Wood. London, Bell, 1960. 30s net*

Probably we are still too close to Victoria's reign for a dispassionate appraisal of its products. To Mrs. Violet Wood glass table lamps, their red shades fringed with crystal beads, recall company arriving for dinner watched from the nursery landing; she remembers the first work-table she received as a four-year-old, the cottage she built of sea-shells, the Victorian passion for locks and keys. The result is that she has written a delightful little book as full of collectable items as a Victorian drawing-room, each article picked up, as it were, and handled appreciatively, but with little attempt to establish its exact period or maker or trace its position in relation to the general advance of technical skills. A particular pleasure is that her illustrations show items that are still collectable, but her own wide experience must make her well aware how many family acquisitions of the 1880s and 1890s are now convincingly ascribed to far earlier Victorian generations, to the bewilderment of serious collectors.

The book, which deserves a better index, purports to offer an overall view of articles in general use but the author's concern is especially with the collector: already Victoriana of the highest quality has more than trebled in price in the last few years, but many items, she declares, are still greatly undervalued to-day. She is especially interesting in her detailed survey of Victorian jewellery and considers

that all the semi-precious and informal jewellery is much underpriced. Lava jewellery might prove an inexpensive hobby, she suggests, or the iron jewellery associated with the Peninsular and Franco-Prussian wars, but wherever she looks she sees intriguing ideas for collectors. She conveys to the reader her own enthusiasm for ornamental bric-à-brac, for the frivolous costly 'favours' associated with charades, cotillions and other Victorian amusements, and the charms that invaded even the chatelaine when Princess Alexandra revived its use in 1871. She finds delicate high-grade work on the boudoir silver table and writes appreciatively of skilled wax work, including the curious fashion for wax copies of funeral wreaths. Lace is an almost impossible subject to treat briefly, but she draws attention to the early Victorian importance of Honiton.

Among furniture Mrs. Wood stresses the love of comfort amid a general air of brightness: only in the '70s and '80s, she says, was the 'heavy' Sunday effect really apparent. Bright colours are noted too among china tableware—even 'rather gaudy' on the Crown Derby 'regularly and heavily invested in by gypsies'—in contrast to the Victorian mania for all-white figures. Here again the collector receives a friendly nudge: parian ware, one of the most distinctive forms of Victorian ceramics, is not now receiving its full share of recognition. Even Goss china, she declares, is sought in the United States, and indeed she shows considerable concern for potential American collectors, including a richly detailed survey of Victorian glass under its American classification, for nineteenth-century glass, she suggests, can, at the least, be a very profitable hobby. Here again she writes and illustrates from long familiarity, avoiding such common pitfalls as the confusion of slag with purple marble glass.

Inevitably her field is immensely wide, from ships in bottles (genuine ones usually showing national ensigns, house flags and international code numbers) to the peculiarly Victorian patchwork stitched over old love letters. To-day even the better dish covers in Sheffield plate are being cut in two and made into bowls for wall lights—and 'they look very well on timbered and rough stone walls'.

THERLE HUGHES

PIONEERS OF MODERN DESIGN: *from William Morris to Walter Gropius. By Nikolaus Pevsner. Harmondsworth, Penguin Books*, 1960. 5*s*

The surprising thing about this new addition to the Pelican library is not only that so substantial, well illustrated and authoritative a book can be issued at five shillings, but that it has not been offered as a paper-back before. After all, it was first published in London in 1936. It was then reissued by the New York Museum of Modern Art in 1949 and, though not too easy to get in this country in its second edition, became immediately the master work on the Modern Movement for all who wished to study the history of the kind of modern design and architecture that became familiar to the many after the Second World War.

The attractive thing about this work is and has always been the absolute conviction of its author that what he was writing of was in fact the right, logical and only proper kind of design for his own century. Dr. Pevsner has never wavered in his belief in the Modern Movement. One senses almost that he would never allow himself to be diverted from the main stream of development, or rather that he would surely recognize the trunk from the branches whatever attractions the limbs might have to offer. Indeed he says as much himself in his latest Foreword, where he speaks of the current freaks and fantasts that seem to echo in our day the deviations of Gaudi and Art Nouveau at the turn of the century. He remains as convinced as ever that the style of Gropius' Fagus Works of 1911 and his model factory at the Cologne Werkbund Exhibition of 1914 are still valid. Indeed it would not be easy now to date either of these buildings, for they are still of to-day in spirit and execution.

Writing some years ago in the *Architectural Review*, Dr. Pevsner made the important

point that, throughout the whole Renaissance period from say 1420 in Florence until the arrival of the Modern Movement around 1910, the architect had to express himself and his age by means of motifs and elements not created by him and his age but by past ages, whereas after 1910 he had once again at his disposal motifs and elements evolved for their power to express his own and no other age. And that perhaps is the real excitement of this book. It unveils decade by decade, art by art, craft by craft and pioneer by pioneer this fundamental liberation that distinguishes our century from the five preceding ones, and in a sense likens our opportunities to the structural glories and experiments of the Middle Ages, though it must not be forgotten that the profound influence of the Bauhaus served not only to liberate the artist but also to discipline the technician in twentieth-century man.

It may have been this duality in the Bauhaus teaching that has given rise to subsequent ambivalence in discussions on the rôle of the designer, some people attaching more importance to the liberation of the artist and others more to the technical disciplines, while some people (though one assumes, not Dr. Pevsner) fall into the trap of believing in a 'Bauhaus style', than which nothing can have been farther from the minds of its progenitors since styles, fashions, vogues or formulae were the very antitheses of all that they upheld. Although he writes of his *Pioneers* as a book 'whose chief aim is in fact to prove that the new style, the genuine and legitimate style of our century was achieved by 1914', one must on this point give Dr. Pevsner the benefit of the doubt. He must be read as interpreting style, not in the sense of a historical vogue, but, to quote another passage from a Pevsner article, as that which 'ties together the aesthetic achievements of the creative individuals of an age'. Thus in another but real sense Dr. Pevsner is himself, at least to his undersigned admirer, a personification of our twentieth-century style, since no one alive to-day has done more to tie together the achievements of our pioneers or explain half so clearly or half so convincingly where we have come from and whither we should go. We should all be thankful to Penguin books for having put Dr. Pevsner's great work within easy reach of everyman.

PAUL REILLY

ASSYRIAN PALACE RELIEFS, AND THEIR INFLUENCE ON THE SCULPTURES OF BABYLONIA AND PERSIA. *Text by R. D. Barnett, Keeper of the Department of Western Asiatic Antiquities in the British Museum. Illustrations selected and photographed by Werner Forman. Batchworth Press*, 1959. 42*s net*

The magnificent series of reliefs from the Palaces of the Assyrian emperors at Nimrud and Nineveh excavated in the last century and now displayed in the British Museum are especially suitable for detailed study, and the results of Mr. Forman's photography are certainly impressive. In this volume sculptures from the time of the emperors Ashurnasirpal, Shalmaneser III, Sennacherib and Ashurbanipal are lavishly illustrated, and the enlarged details will be welcomed by archaeologists who constantly turn to these reliefs for solution of many different problems. Many of the objects on the reliefs are known from the results of excavation; confirmation is thus afforded concerning their use, purpose or date and in many instances we have not only the pictorial representation but contemporary descriptions in cuneiform about the actual military, hunting or ritual scenes portrayed by the sculptor. A particularly valuable series of 36 plates gives details of the Balawat Gates, including an excellent photograph of the complete gates as recently restored and set out in the Nimrud gallery in the Museum. The coloured plates also include reliefs in glazed tiles from Babylon now in the Staatliches Museum, East Berlin, and Persian reliefs in the Louvre, but these are unfortunately scattered throughout the plates of the earlier Assyrian sculpture and none are given a plate number, so that the reader cannot study them as a whole.

Dr. Barnett's text forms an invaluable introduction not only to the whole subject of the origin and development of decoration in Assyrian palaces but also to such problems as the organization of the Assyrian army or the actual purpose of the lion hunt reliefs. The reliefs are admirably related to the long history of British excavation in Iraq, from Layard in 1848 to recent excavations by Professor Mallowan at Nimrud. The text is annotated in detail, and with the detailed description of each plate (giving the British Museum number of each relief) it will be a constant help to students who are concerned with many different problems of Western Asiatic archaeology.

K. R. MAXWELL-HYSLOP

FROM THE JOURNAL OF 1861

VOLUME IX. *15th February*

THE INFLUENCE OF TEA

[*Extracted from a contribution made by Dr. T. J. Carpenter, F.R.S., to the discussion which followed a paper by Dr. Edward Smith, of the Brompton Hospital, 'On the Uses of Tea in the Healthy System'.*]

A medical man, in investigating the habits of a patient, might attribute certain symptoms to the use of tea. He might recommend that the use of tea should be discontinued, and the symptoms might disappear, and when a number of these cases were brought together, they might have reason to believe that tea was the cause of the perturbed action of the system which these cases exhibited. With regard to the effect of tea on the digestion, he might observe that when the principal meal of the day—dinner—had been taken, and the system was charged with what was for the time an excess of food, the individual was less disposed for active mental or physical exertion. His own experience was that a cup of tea, moderately strong, taken two or three hours after a full meal, had a wonderfully clearing influence upon the mind, so that persons of studious habits generally preferred the evening, after tea, for any very great mental effort which they wished to make. He did not think it was a good habit, but persons felt that in the quiet they could command in the evening, they could better concentrate the attention, especially when the brains had been 'cleared' by a good cup of tea. He admitted the force of what Dr. Smith had placed before them, with regard to tea helping the blood to unload itself of the matter of which it needed to be relieved; but there was something more than this. There was the fact of the influence of tea—especially of green tea—in inducing wakefulness. Now, he believed this was generally the result of the increased activity of the mind induced by tea. When persons were restless, not arising from a feverish condition, but from a state of excessive mental activity, they had a parallel state to that which was induced by the operation of tea, especially green tea. The effect of a cup of green tea upon himself, when taken an hour or two previous to his ordinary bed time, would be to produce extreme wakefulness. He therefore felt that there was something in the peculiarly stimulating effect of tea upon the nervous system besides the influence upon the physical condition of the body which Dr. Smith had spoken of. He knew it was the habit of persons engaged upon the morning newspapers to perform a great deal of their arduous literary labour under the stimulus of strong green tea. . . .

He would call attention to one or two facts that were elicited by the investigations of a Commission appointed by the Admiralty about eight years ago with regard to the use of spirits in the Navy. The practice in the Navy was at that time to have two

daily servings of grog, but the experiment of introducing tea into the Navy was tried, and the evidence given before the Committee went to prove that the men to whom the choice was given generally preferred tea to the evening allowance of grog, and eventually that serving was discontinued in favour of tea, to the general satisfacton of the crews. He would also add that it had been stated by Sir John Richardson who accompanied the first overland Arctic expedition under the late Sir John Franklin, that under the trying circumstances of such a climate, the men derived greater benefit from the more lasting heat produced in the system by tea than from spirits.

Some Activities of Other Societies and Organizations

MEETINGS

WED. 1 FEB. Building Centre, Store Street, W.C.1. 12.45 p.m. Film : *Figure in Portland Stone.*

Engineers, Junior Institution of, at James Watt Memorial Institute, Gt. Charles Street, Birmingham. 7 p.m. B. Chellingworth : *Industrial insurance.*

Royal United Service Institution, Whitehall, S.W.1. 3 p.m. Alastair Buchan : *The deterrent and disarmament.*

THURS. 2 FEB. Naval Architects, Royal Institution of, 10 Upper Belgrave Street, S.W.1. 4.45 p.m. Professor G. Aertssen : *Sea trials on two cross-channel twin-screw ships.*

Refrigeration, Institute of, at The Memorial Building, 76 Mark Lane, E.C.3. 5.30 p.m. Carl Munters and Lennart Lindqvist : *A new conception in cooling tower design.*

University of London, at Imperial College of Science and Technology, Prince Consort Road, S.W.7. 5.30 p.m. Professor A. B. Pippard : *The electronic structure of metals.*

FRI. 3 FEB. Engineers, Junior Institution of, at Pepys House, 14 Rochester Row, S.W.1. Film Evening. 7 p.m. *Building a bridge in 90 days, Forming with rubber on the hydraulic press, Power line to Kitimat* and *Aluminium for sub-zero methane.*

MON. 6 FEB. Manchester Building Centre, 115 Portland Street, Manchester. 1 p.m. Films : *The Titanium pigment story* and *Parapet Walls.*

TUES. 7 FEB. Reinforced Concrete Association, at the Birmingham and Midland Institute, Paradise Street, Birmingham. 6 p.m. Cyril V. Blumfield : *Concrete construction in Russia.*

WED. 8 FEB. Building Centre, Store Street, W.C.1. 12.45 p.m. Films : *Service to industry* and *Area service.*

Kinematograph Society, British, at Shell-Mex House, W.C.2. 7.30 p.m. F. W. Rennie : *Past, present and future trends in sound recording techniques.*

Victoria & Albert Museum, S. Kensington, S.W.7. 6.45 p.m. Barbara Morris : *English chints from William Morris to the present day.*

THURS. 9 FEB. Royal Commonwealth Society, Northumberland Avenue, W.C.2. 1.15 p.m. Alec Dickson : *Youth and the Commonwealth.*

FRI. 10 FEB. Engineers, Junior Institution of, at Pepys House, 14 Rochester Row, S.W.1. 7 p.m. G. G. Ballard : *The measurement of nuclear radiation.*

MON. 13 FEB. Royal Geographical Society, 1 Kensington Gore, S.W.7. 6 p.m. Film : *Greenland.*

University of London, at London School of Economics and Political Science, Houghton Street, W.C.2. 5 p.m. Professor A. K. Cairncross : *International trade and economic growth.*

WED. 15 FEB. Building Centre, Store Street, W.C.1. 12.45 p.m. Film : *Frankipiles.*

Chemical Engineers, Institution of, Burlington House, W.1. 5.30 p.m. Professor P. M. S. Blackett : *Science and technology and the developing countries.*

Victoria & Albert Museum, S. Kensington, S.W.7. 6.45 p.m. Charles Oman : *English church plate* (1548–1830).

THURS. 16 FEB. Chemical Society, at The University, Glasgow. 4 p.m. Professor D. H. Everett ; *Physical absorption.*

Royal Commonwealth Society, Northumberland Avenue, W.C.2. 1.15 p.m. Miss Ngaio Marsh : *Young New Zealanders.*

FRI. 17 FEB. Engineers, Junior Institution of, at Pepys House, 14 Rochester Row, S.W.1. 7 p.m. H. S. Wolff : *Bioengineering.*

Royal Geographical Society, 1 Kensington Gore S.W.7. 5.15 p.m. A Symposium : *The Admiralty chart.*

MON. 20 FEB. Manchester Building Centre, 115 Portland Street, Manchester. 1 p.m. Films : *The new 'V' brick* and *Handling bricks in packages.*

WED. 22 FEB. Building Centre, Store Street, W.C.1. 12.45 p.m. Film : *Aluminium in architecture.*

Kinematograph Society, British, at Central Office of Information, Hercules Road, S.E.1. 7.30 p.m. A. C. Conford : *Carbon in motion picture engineering and electronics.*

Royal United Service Institution, Whitehall, S.W.1. 3 p.m. Graham Hutton : *The economics of technical defences.*

THURS. 23 FEB. Chemical Society, at The University, Liverpool. 5 p.m. Professor R. L. Wain : *Chemical control of plant growth.*

Royal Commonwealth Society, Northumberland Avenue, W.C.2. 1.15 p.m. Sir Hilary Blood : *The future of Malta.*

University of London, at London School of Economics and Political Science, Houghton Street, W.C.2. 5 p.m. Professor C. F. Carter : *Safety and competition.*

FRI. 24 FEB. Engineers, Junior Institution of, at Pepys House, 14 Rochester Row, S.W.1. 7 p.m. J. T. Duff : *Traffic engineering in urban areas.*

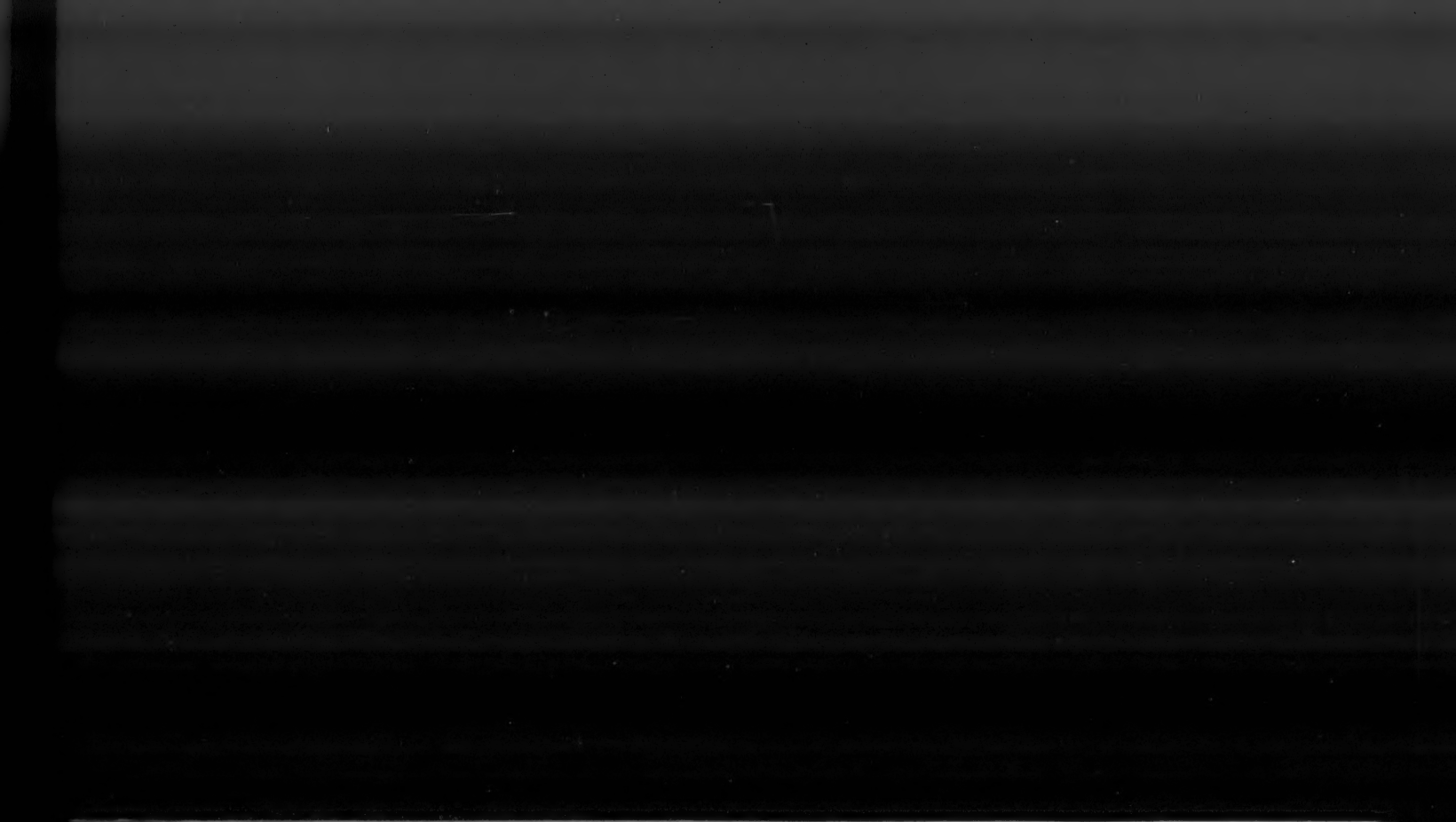
MON. 27 FEB. Royal Geographical Society, 1 Kensington Gore, S.W.7. 8.30 p.m. Sir John Hunt : *A summer expedition to Greenland.*

TUES. 28 FEB. Naval Architects, Royal Institution of, at 76 Mark Lane, E.C.3. 5.30 p.m. J. M. Murray : *Safety of nuclear marine propulsion plant.*

OTHER ACTIVITIES

NOW UNTIL WED. 11 FEB. Design Centre, Haymarket, S.W.1. *Perspex display (ICI).*

SAT. 28 JAN.–SUN. 19 FEB. Arts Council, at Towner Art Gallery, Eastbourne. Exhibition : *Johann Zofanny.*

SAT. 28 JAN.–SAT. 18 FEB. Arts Council, at City Art Gallery, Wakefield. *Portrait Groups from National Trust Collections.*

MON. 30 JAN–WED. 11 FEB. Design Centre, Haymarket, S.W.1. *New furniture designs from the furniture show at Earls Court.*